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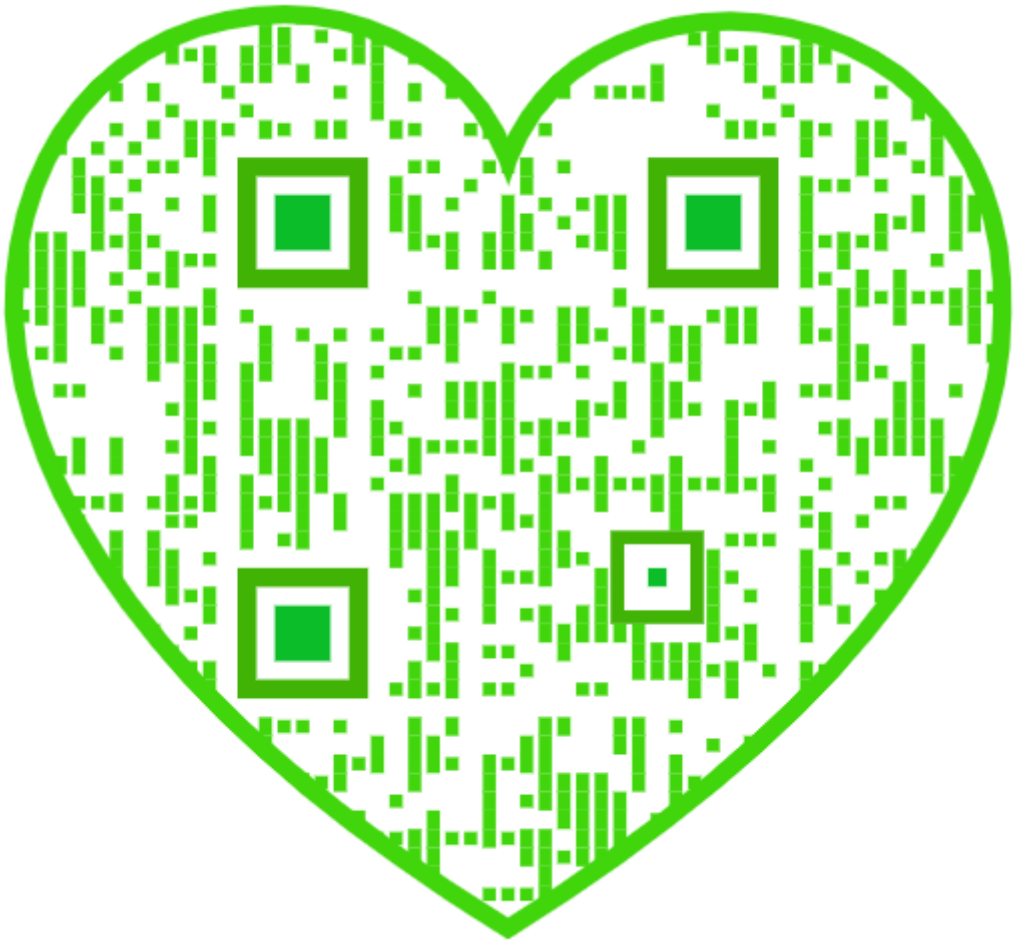

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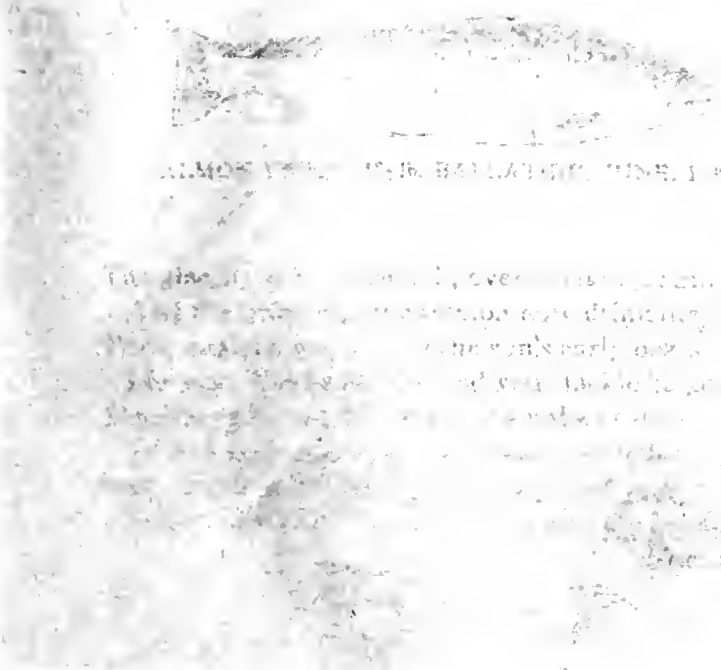


HIS MAJESTY KING GEORGE V.

Frontispiece.

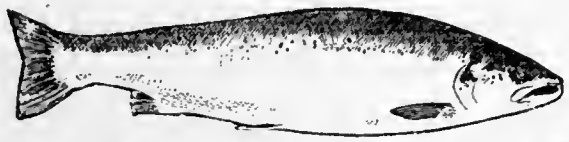
FISHING

AT HOME & ABROAD

EDITED BY

THE RT. HON. SIR HERBERT MAXWELL,

BART., F.R.S., D.C.L., LL.D.



SALMON-TROUT, 18½ lb. BALLATHIE, JUNE, 1900.

The glad trout is roaming in every clear stream,
And the grilse and the salmon now drink the May flood:
Then, anglers, be up with the sun's early beam,
Let your flies be in trim and your tackle be good.
Then leave for a while the dull smoke of the city;
Sons of gain quit your desks and your ledgers lay by;
Seek health in the fields while each bird sings its ditty
And breathe the pure air underneath the broad sky.

Newcastle Garland, 1836.

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MCMXIII

DEDICATED BY GRACIOUS PERMISSION
TO HIS MAJESTY KING GEORGE V.

PREFACE

IN adding another volume to the existing literature of angling, which is already more copious than that of any other field sport, we find justification in the fact that heretofore no attempt has been made on a similar scale to provide in a single work information about fishing in all parts of the world. It is an ambitious scheme, no doubt; but, inasmuch as the Editor has succeeded in securing the co-operation of recognized adepts in the various branches of the craft, and as these have contributed to the several sections nothing that is not founded upon their actual experience, the information given may be relied on as thoroughly trustworthy.

Anglers have multiplied so prodigiously during the past half century and facilities of travel have so vastly increased, that the waters of the British Isles can no longer accommodate the crowd. We are encouraged, therefore, to believe that a useful purpose may be served in showing what excellent sport may still be had in other parts of the world, more or less remote.

The fishery resources of North America, once reckoned inexhaustible, have at length been recognized as a most valuable asset, both by the legislatures of the United States and by the Canadian government, and measures have been taken to prevent their undue depletion. The quality of sport which may be enjoyed among the salmon, trout and char of that continent is indicated in the articles contributed by three experienced fishermen Mr Theodore Gordon, Mr E. T. D. Chambers and Mr Nigel Bourke. Mr R. B. Marston, Editor of the *Fishing Gazette*, has dealt succinctly with pike and other species usually classed as "coarse fish" in this country. In his papers it will be seen that, if the fish be rightly termed "coarse," success in capturing them can only be obtained by means the reverse of coarse.

Mr H. S. Thomas, C.S.I., author of *The Rod in India* and *Tank Angling in India*, is a veteran in the craft, and has opened out what must appear to most English readers a spacious vista of enjoyment in the East. He has also enabled us to enrich his pages by reproducing the plates of Indian fishes, which he caused to be drawn from nature. Mr C. E. Lucas has furnished notes of trout fishing in New Zealand, a country which promises to eclipse every other in the quality of that branch of angling, if, indeed, it has not done so already.

Lastly, but not least, Mr F. G. Aflalo, pioneer and skilled exponent of the finer methods of marine-angling, has revealed the extent of the sporting capabilities of the ocean in many quarters of the globe.

No pains have been spared in preparing the illustrations. The late Mr Ernest Briggs, R.I., R.S.W., united artistic quality of a high order with a perfect acquaintance with angling

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technique. The illustrations he prepared for this Volume were the very last upon which he was employed. We deeply regret that his health, which had long been a cause of anxiety to his friends, broke down completely in the Spring of 1913, and his illness terminated fatally on the 4th of September, in his forty-eighth year. Before he died Mr Briggs had the great satisfaction of knowing that one of his characteristic river pictures was hung in the National Gallery of British Art, London; it having been purchased by the Royal Academy of Art under the terms of the Chantry Bequest. This was his last exhibited picture.

Mr P. D. Malloch has few rivals in scientific photography of fish. We owe sincere thanks, also, to Mr Alfred Gilbey and other gentlemen who have contributed prints and photographs for reproduction.

The following is a list of those who have kindly associated themselves with this work before publication, and to whom the thanks of the publishers are due.

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HIS MAJESTY KING GEORGE V

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PRELIMINARY

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

MANY years ago a writer in one of the journals devoted to field sports launched a proposal in all seriousness for the institution of a Council of Sport which should be empowered to confer degrees and decorations upon persons who had proved their prowess in various branches of pursuit. Happily the scheme got no further than the proposal, for one can conceive nothing more detrimental to field sports than that they should acquire the character of a business or profession. As it is, except foxhunting and cricket, all the principal field sports and games have suffered from the pernicious influence of record-breaking. Racing and coursing are in their very nature competitive; but there is no surer method of vulgarizing game-shooting and fishing, and robbing them of half their fascination, than making them the subject of competition. Some measure of emulation, indeed, must be allowed to give zest to the sport; but the love of excellence for its own sake ought never to degenerate into a mere effort to excel others, and I know of no more sorrowful travesty of the contemplative man's recreation than the members of an angling club competing for stakes and prizes.

I forget the full list of achievements which the writer abovementioned prescribed as necessary to entitle one to claim a sportsman's degree and don the badge to be conferred by the Council of Sport; but I remember that any one aspiring to these distinctions was to present a certificate that, among other feats, he had shot a royal stag and landed a 20 lb. salmon. I suppose, therefore, that although most anglers are entered to the craft by the capture of some humbler quarry, a writer on angling should begin at the other end and assign the first place to *Salmo salar.*

That, however, must not be assumed to imply that salmon fishing is the most difficult branch of the art of angling. Far from it. Much greater skill and more delicate manipulation are called for in expiscating a 2 lb. trout from the tranquil Itchen than in inducing a spring salmon of fifteen times that weight to take a three-inch fly in the darkling Tay or turbulent Spey. Luck is reduced to its minimum in chalk-stream fishing; in salmon-fishing it is a most potent and ever-present factor. Let the novice once acquire the knack enabling him to project his lure to a moderate distance over the place

where his gillie tells him salmon are in the habit of resting, and he runs every bit as fair a chance of hooking a fish as the most accomplished master of the game, though in handling a salmon after it is hooked an experienced fisher will score many points over the tyro. Every fisherman's memory must be stored with instances wherein luck—sheer luck—was the chief, if not the sole, agent. I will recall two such instances in both of which my friend, the late Mr F. Mason, was an actor.

The scene of the first was laid on the Thurso. Most of those who are acquainted with that weird river will agree with me in considering the cream of it to consist in beat No. 7, the longest and at the same time the liveliest, in an otherwise somewhat sluggish course. Beginning at the top one likely fishing day in February, Mason, no mean performer, searched every stream and pool down to the Rock—the lowest on the beat—without feeling a touch. After eating his sandwich, he retraced his steps, fishing every possible place with faultless diligence, but with no ponderable result. By the time he reached the Sauce Pool again (the top cast on the beat) the shades of the long Caithness night were gathering. Like all the rest, the Sauce Pool was blank, and, being honestly tired, Mason laid his rod on the bank, leaving the line streaming in the current, and told his gillie to wind up. The gillie proceeded to obey, but found that the fly was fast, as he supposed, in a submerged rock. Mason had turned homeward, but was stopped by a shout—"Here a fish!" A fifteen-pound springer, which had ignored Mason's fly when artistically presented to him, had quietly seized it as it dangled in the stream, and was safely landed to save a blank day.

The other incident, in which the luck turned savagely against poor Mason, occurred in the opposite extremity of Scotland—the extreme south-west—where I was a joint tenant with others of a river whence all the nets had been removed. Mason having come to pay me a visit, every good sportsman will understand how supremely anxious I felt that he should have some sport. The month was April—the best of the whole year for the Cree, especially for its tributary the Minnick (which, by the way, is the larger river of the pair), the water was in prime order, and on the first day it fell to our turn to fish my favourite beat for spring salmon—namely, the lower portion of the Minnick. Take it all round I think that, except the middle portion of the Kvina river in southern Norway, this part of the Minnick is the prettiest bit of flycasting I know. The water is very clear, without a stain of peat, but it makes up for what might be a disadvantage to the

A SALMON IN JUNE

PLATE I.

where his gillie [illegible] salmon are in the habit of resting, and he runs every bit as [illegible] of hooking a fish as the most accomplished master of the [illegible] in handling a salmon after it is hooked an experienced [illegible] my points over the tyro. Every fisherman's memory [illegible] with instances wherein luck—sheer luck—was the chief, if [illegible] agent. I will recall two such instances in both of which my [illegible] the late Mr F. Mason, was an actor.

The scene of the first was laid on the Courso. Most of those who are acquainted with that weird river will agree with me in considering the [illegible] of it to consist in beat No. 7, the largest and at the same time the livelier, in [illegible] but sluggish course. Beginning at the top one [illegible] Mason, no mean performer, searched every [illegible] in the Rock—the lowest on the beat—without feeling [illegible] his sandwich, he retraced his steps, fishing [illegible] diligence, but with no ponderable result. [illegible] Pool again (the top cast on the beat) the [illegible] were gathering. Like all the rest, the [illegible] honestly tired, Mason laid his rod on the [illegible] in the current, and told his gillie to wind [illegible] obey, but found that the fly was fast, as he [illegible] rock. Mason had turned homeward, but was [illegible] a fish!" A fifteen-pound springer, which [illegible] fly when artistically presented to him, had quietly [illegible] the stream, and was safely landed to save a blank day.

The [illegible] the luck turned savagely against poor Mason [illegible] the opposite extremity of Scotland—the extreme [illegible] tenant with others of a river whence all the nets had been removed. Mason having come to pay me a visit, every good sportsman will understand how supremely anxious I felt that he [illegible] sport. The month was April—the best of the whole year [illegible] especially for its tributary the Minnick (which, by the way, is [illegible] of the pair), the water was in prime order, and on the first [illegible] to fish my favourite beat for spring salmon—namely, [illegible] of the Minnick. Take it all round I think that, except the [illegible] the [illegible] river in southern Norway, this part of the Min- [illegible] bit of flycasting I know. The water is very clear, without [illegible] makes up for what might be a disadvantage to the

ERNEST BRIGGS.

angler by being very rough. Its course is through a rugged moorland, a series of cascades separated by churning cauldrons, rapid streams and rocky pools of small extent. Every inch of fishing water can be covered without wading by a fifteen-foot greenheart, and the nature of the channel ensures lively sport when a fish is hooked.

Well, I arranged that Mason should fish the water before me; but as we were to start from a bridge near the bottom of the beat, I set him down there with a gillie to show him where the fish lay, and went down alone myself to try a place below the bridge so as to give him a good start in fishing up. He had the cream of the water before him, to which I felt sure that so good a fisherman would do full justice. Wind, weather and sky were all that one could wish for; but it had rained very heavily in the night, and I was haunted by apprehension of the river coming down in flood before long.

I killed a nice fish of 11 lb. in the low pool, and then proceeded to follow Mason up the river, where he had a start of a full mile before me. It seemed that he must have fished the water very carefully, for I saw nothing until I overtook him near the top of the beat, and was surprised to find that he had not moved a fish. It was now high noon, the river was rising fast and I foresaw that it would be unfishable before Mason finished the beat. So leaving three excellent pools untouched for him, I passed him and went on to the topmost pool on the beat, where an ancient bridge, fondly called Roman by local antiquaries, spans the river, looking strangely as if it had lost its way in the brown moor, for there is no vestige of a road on either side of it. Under this bridge the river rushes through a narrow rocky gorge, expanding suddenly into a broad circular pool. The flood was now well under way, and the chance of moving a fish in the tumbling water was a faint one. I grudged the minutes spent in changing my fly to a larger one; but it was worth the trouble, for at the second cast up came a nice little fish of 8 lb. and was fast. Be sure that I did not waste any time in getting him out; then, thinking myself an old fool for attempting any more under what seemed prohibitive conditions, I hurried round by the bridge to try the quieter water on the other side. Luck again! I landed a third fish, 9 lb., after which all further fishing was quite out of the question.

Now I had planned the beat most carefully for Mason's advantage, yet he never had a rise that day, and he certainly was not inferior to me in either skill or diligence.

In respect of heavy fish luck plays a still more capricious part. It is the

dream of every young salmon fisher (and it remains the unrealized dream of many an old one) to kill a 30 lb. salmon; and when that dream has been fulfilled he hankers after a forty-pounder. It is not a very rational desire, for these very heavy fish seldom offer such a spirited resistance as an eighteen- or twenty-pounder. It generally takes longer to get one of them ashore; but the conflict is usually more stubborn than fierce. Nevertheless, there is something in the contrast between a thread of single gut and the massive proportions of a great salmon that causes the successful angler to feel that he has accomplished rather a fine feat in landing a monster. Yet he has nothing to thank but his luck. My old fishing book bears witness that I had been fishing more or less for thirty-eight years, during which I killed 563 salmon, before I landed a fish of 30 lb. Three times during that period I missed my opportunity. Two of these occasions were on the Tweed, when, having to go to Edinburgh for meetings, I invited a lady to occupy my beat. The first of these ladies gave me the impression of thinking she was doing me a favour by accepting it. She fished for exactly one hour and a quarter in the Haly Weil at Bemersyde, and returned home with a salmon of 35 lb. The other lady, wholly unskilled, fished the Willow Bush at Mertoun for me and landed one of 32 lb.—an ugly red cock, it is true, but still a heavier fish than had ever fallen to my lot.

The third occasion was in Norway, on the romantic Rauma, where I had the pleasure of gaffing a beautiful salmon of 33 lb. for a friend to whom I had lent my rod for an hour or so.

Talking of the Rauma brings to mind another incident on that noble river—but when an old salmon fisher takes to yarning he is too apt to presume upon the good-nature of his company. Readers, however, have this advantage over listeners, that they can turn off the tap of narrative at pleasure; wherefore, should anybody not care to hear how the spell that had lain upon me for so many years was broken, and how I succeeded in landing a big fish at last, let him skip the rest of this chapter.

We went to Norway in 1904 earlier than usual—earlier, as it turned out, than there was any need for—only to find the Rauma far lower than it should be at the beginning of June, for the weather was cold, the snow had not come away properly, and there were hardly any fish running. But the first time I fished the famous Foss of Aarnhoe I saw two very large fish rise at the very tail of the pool. Nothing else was moving in that great tumbling basin except this stately pair, just where the current, broad and smooth, sweeps towards the rapids below.

Now this cast has to be fished from a boat and is an exceedingly ticklish spot wherein to hook a salmon. If the fish can be persuaded to move up into the Foss pool, all may be well, for there is plenty of room there to tire him out: the angler may play him at pleasure and go ashore to land him. But the draw at the tail of the pool is so powerful that if a salmon turns his broadside to it he must go down into the rapid. Then the fight begins in earnest, with odds against the fisherman, for the boat has to be rowed smartly *away from* the salmon so as to set the angler ashore before he can follow his fish. By the time he reaches terra firma he is separated from the said fish by a side stream, beyond which a long spit of huge boulders projects into the main river. All this time the salmon has been descending the rough water and Piscator may think himself lucky if no more than one hundred yards of line have been taken from the reel. He has now to scramble at top speed to get on terms with his fish. In a high water the line may have been carried clear of an enormous rock that lies in mid-channel, after which it is fairly plain sailing for a couple of hundred yards down to Langhol, a fine open stream, where, if the fish is still on, it may be landed at leisure; but in a low water it is three chances to one that the rock has fouled the line and the salmon has broken away.

Now to return to my position on the Foss pool. In considerable trepidation I sent a small double-hooked Silver Grey over the lie of those two big fish. In a moment I felt a heavy pull, and was fast. At first the fish, to my great relief, moved slowly upwards, keeping very deep. It circled twice or thrice round the entire circumference of the pool, then turned with an evident intention of seeking the company of its fellow at the tail. No strain that I dared to put upon the single gut prevailed to stop him; down, down—deep down—he forced his way, until he paused in the very point of danger, fiercely shaking his head. Then down again, and I knew that he must leave the pool. We rowed quickly ashore; I scurried breathlessly over the rocks, the reel spinning wildly all the time. When I regained the river-side it seemed that all had gone well, for the line was stretching away among the tumbling waters in the direction of Langhol. I wound in as fast as possible; presently the line began to point up stream and my hopes to sink. A moment of suspense—then the fatal truth became plain; the line had hanked upon the sunken rock, and the salmon had departed with the little Silver Grey. From first to last I never caught a glimpse of him, but there could be no doubt that he was one of the two big fish I had seen rising.

By this time the sun was on the water, and the morning's fishing was over. Two days later I was again on Aarnhoe, which I fished without moving anything or seeing anything move, till the fly came over the exact place where yesterday I had met the fellow with whom I was so soon to part. Precisely the same thing happened; the fly was seized; the fish sailed slowly up into the pool; but on this occasion it remained there, so that in less than a quarter of an hour Johann slipped the gaff into the broadside of a 33 lb. salmon.

We were discoursing of sportsman's luck when I wandered off into reminiscence. Luck counts for more in salmon-fishing than in any other sport, especially as success depends upon uncontrollable conditions of weather ; but luck is not everything. To enable the angler to take advantage of fortune when she smiles, he should be at some pains to become acquainted with the life-history, the habits and the moods of the creature upon which he depends for sport.

THE ATLANTIC SALMON

SALMO SALAR

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

PROBABLY there is no animal of similar commercial importance of which the life history has been so difficult to elucidate as the salmon. Controversy has been waged about it without end, not always in a philosophic spirit, and it is only in recent years, since the scientific system of observation and marking instituted by Mr Walter Archer, as Inspector of Scottish Salmon Fisheries, has been carried forward by Mr Calderwood, Mr H. Johnston, Mr Malloch, Dr Noel Paton, etc., in the north, and by Mr Hutton and other careful investigators in England, that any considerable addition to knowledge has been attained. Much of the ground formerly occupied by a rank growth of random hypothesis and *a priori* argument has now been cleared; and although a great deal of uncertainty upon important points still awaits settlement, we have the satisfaction of feeling that research is being conducted on right lines and sound principles.

The chief hindrance to the investigation of salmon problems consists in the fact that, although the salmon is a native of fresh water,* it passes most of its life in the sea, where it is very difficult to follow its movements. Nevertheless a great advance in this respect has been achieved as the result of marking migrating smolts in the Tay, a process most successfully conducted by Mr Calderwood and Mr Malloch in the spring of 1905 and fully described in Mr Malloch's work on the life-history of the salmon.† Previous to that undertaking, all that was known with certainty was that the process of spawning went on in the late autumn and winter, that after the ova had been deposited in the gravel of the river bed by the female and duly fertilized by the male, a period of from ten to seventeen weeks, according to temperature, elapsed before the tiny alevins made their escape from the eggs. The experience gained in fish-hatcheries established the fact that, after spending their first summer gregariously as fry, in the following

*Like most other points in the life-history of salmon this has been matter of controversy. Mr W. L. Calderwood, founding on the fact that the majority of *Salmonidæ* are purely marine, and having regard to the ease with which the common trout (*S. fario*) endures a sojourn in salt water, considers that the salmon should be classed as a marine species. On the other hand, seeing that this fish cannot perpetuate its species in the sea, salt water being fatal to the vitality of the ova, that it repairs regularly to rivers in order to spawn, and that the first two or even three years of its life are spent there, it is difficult to regard it otherwise than as a native of fresh water.

†*Life-History and Habits of the Salmon*, etc., by P. D. Malloch. London: A. & C. Black, 1910.

spring they appear as "parr," bearing a close resemblance in appearance and habits to common brook trout. At this stage they are exposed to many relentless persecutors, chief among which are pike, eels, mergansers, cormorants and other predaceous creatures. Trout-fishers, also, exact a heavy toll upon them, unless water bailiffs are ceaselessly vigilant; many do so in ignorance, believing these little fish to be undersized trout; but there are plenty of unscrupulous fellows who know well enough what they are doing, for salmon-parr makes a very toothsome dish.

In the second autumn the parr, being about eighteen months old, ought to measure five or six inches in length. In the following spring those which have attained these dimensions begin to undergo a singular metamorphosis. Their trout-like livery assumes a silvery lustre which gradually obscures the characteristic "parr-marks" (nine dark vertical bars along each side) and the scarlet spots and yellow flanks; the little fish becomes much more athletic in figure, restless in its movements and is clad from end to end with a lovely shining coat of silver. This is his travelling dress and as soon as it is complete he starts in life as a "smolt" and hurries away with his companions to the sea. This migration takes place in April, May and June, British smolts being then a few weeks more than two or three years old, according to their forwardness in growth. The majority of British smolts probably move seaward in their second spring, though a proportion are known to remain in the river until their third season; but in Norwegian rivers Herr Dahl has ascertained that the age of smolts at migration varies between two and five winters, those in southern rivers migrating early, and the tendency to linger in the rivers increasing towards high latitudes.*

Desperate perils await these tender little fish on their journey. Seagulls collect on the shallows and pick out thousands of potential twenty-pounders, and—sad to say—river trout are as bad as any pike or eel in devouring smolts. I have never seen a parr in the stomach of a trout; perhaps the young salmon is so well disguised in that stage of growth that trout do not distinguish them from their own kin, and spare them accordingly. But it is quite different after the parr has assumed the silver uniform of the smolt. I have seen seven salmon smolts taken from the stomach of a trout caught with fly in the Helmsdale river. This trout's gross weight was 1¼ lb., but one-third of that weight was furnished by the contents of its stomach. Still more deplorable was the result of dissecting a Norwegian

**The Age and Growth of Salmon and Trout in Norway*, by Knut Dahl, pp. 34, 35.

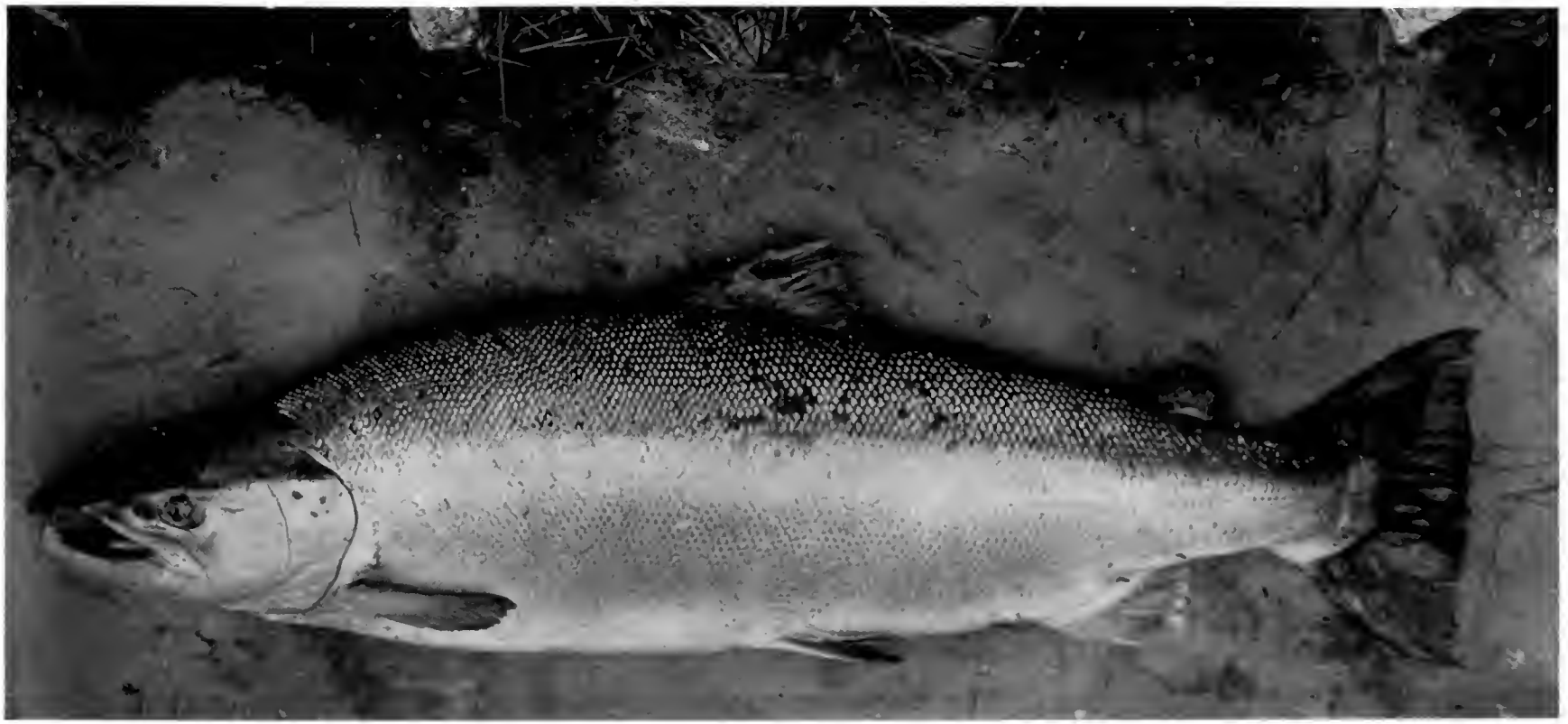

Photo by] [P. D. Malloch.

SALMON FROM THE TAY, 58 lb.

river trout of 2 lb. which was caught on a large "Durham Ranger" in the Rauma. My attention having been drawn to the distended state of its stomach, I ripped it open and took out no fewer than ten beautiful smolts. The removal of these reduced the weight of the trout from 32 ounces to 22.

Now we have followed the young salmon from the nursery to the ocean, keeping them well within ken all the time. But after parting with them in the estuary, until recently their movements were the subject of sheer conjecture and dogmatic assertion. There was a total absence of evidence as to the rate of the fish's growth or the time that should elapse before it reappeared in river as a grilse. Many fishermen believed that a smolt of an ounce weight, reaching the sea in April, might return as a grilse in June weighing two or three pounds, or in August weighing from five to seven pounds. Such a rate of growth is well-nigh incredible on the face of it, and it has now been proved beyond doubt that it does not take place.

The latest light thrown upon the problem is calculated to dispel some of the most cherished convictions of fishermen, whether professional or amateur. The distinction between grilse and small salmon was never very clear except to experts, and even they could not define it very clearly. One rough test was that, whereas it is easy to land a salmon by grasping it by the tail, a grilse's tail is too slim to allow that to be done. Asked by a tyro how he could distinguish between a grilse of 8 lb. and a salmon of 6 lb., an old Scottish fisherman replied, "Hoots! it's as easy to ken the differ as between an auld woman and a lassie." This simple formula was sound so far as it went; but it did not go far enough.

Attempts have been made from time to time by marking smolts to solve the mystery shrouding the periodicity of salmon migration to and from the sea; but smolts are too small and tender to carry any but the most delicate distinctive mark. A great advance was achieved as the result of an experiment undertaken in the spring of 1905 under the auspices of the Tay Salmon Fisheries Company, when Mr W. L. Calderwood and Mr P. D. Malloch superintended the marking of smolts (that is, samlets five or six inches long) on their first migration to the sea. Six thousand five hundred smolts having been intercepted in their migration, at Kinfauns, a piece of fine silver wire was inserted in the forepart of the dorsal fin. It will readily be understood that the handling of such tender fish as smolts was a delicate matter; it was accomplished by

using vulcanite tubes in which the fish were held during the process of marking. None of these fish was seen again during 1905, which was negative evidence against the belief entertained by many fishermen that smolts descending in April and May reascend the rivers as grilse during the ensuing summer. But during the summer of 1906 forty grilse bearing the tell-tale silver wire were taken in the nets above Perth. Their aggregate weight was 266½ lb.—an average of about 6⅔ lb., the two heaviest grilse, taken in August, weighing 10½ lb. each.* From this the inference is fair that the smolt requires not less than a year's marine diet to fit it for revisiting fresh water. Even so, the rapidity of growth is very remarkable; a smolt weighing, say, 1½ oz. is proved to increase to fifty or sixty times that weight in twelve months, and in the case of the August grilse abovementioned, to one hundred times its weight in fifteen months.

There was nothing, so far, to cast doubt upon the accepted belief that all salmon first reappear in the rivers as grilse during the summer and autumn months; but this doctrine was conclusively dispelled during the season of 1907, when thirty-seven fish marked with silver wire were taken as spring salmon between February 18 and June 14, of weights ranging from 7 lb. to 13 lb. Further surprises were in store for the observers. Between July 18 and August 20 twenty-five marked fish were taken as summer salmon, and two more after the nets were off—thirty salmon in all, averaging 16½ lb., the heaviest being 27 lb. in weight. Again, in February and March, 1908, four salmon were taken in the Tay that had been marked with silver wire nearly three years before. Their weights were 13 lb., 15 lb., 15 lb., and 35 lb.

Now, all these fish—the grilse of 1906 and the salmon of 1907 and 1908—were pronounced to be maidens—that is, fish which had never spawned—returning to the fresh water for the first time; whence the conclusion is that the period of a salmon's sojourn in the sea after he goes there as a smolt, is of uncertain duration, and that all salmon do not, as has hitherto been assumed, make regular annual migration. The influence of the knowledge thus acquired ought to modify considerably all legislation affecting such an important source of food supply as our salmon fisheries.

But all smolts do not grow at an equal rate. Some are probably less

*This is far in excess of the weight attained by grilse in smaller rivers, the Tay and the Tweed being exceptional among Scottish waters in that respect.

Photo by] [P. D. Malloch.

GRILSE FROM THE TAY, 5 lb. July 15, 1907.

fortunate than others in meeting with plentiful food in the sea. For this, or for some other unexplained reason, they are not all ready or willing to return to the river at somewhat more than three years old (which was the age of the marked grilse recaptured during the summer of 1906, if it is assumed that all the smolts marked in 1905 were two years old).

Previous to these experiments it was universally assumed that all salmon made their first reappearance in fresh water as grilse in summer and autumn, and that all salmon spawned, under normal conditions, each year of their lives. Fishermen were, and are, familiar with a class of small fish running up very early in the season, similar in weight to grilse—that is, from 4 to 10 lb.; but these have hitherto been regarded as fish that, having spawned as grilse in a previous season, were returning to the river to repeat the process. The result of the Tay netting in the first half of the season of 1907 has shown this belief to be entirely erroneous. It will be explained later how it was ascertained that these fish, and those which are next to be mentioned, were returning to the river for the first time.

The average weight of summer running salmon in the Tay and most other rivers considerably exceeds that of the spring run of small fish. It had never been suspected that these larger fish were maiden salmon which had never been in the fresh water since they left it as smolts; yet such was proved to be the truth. The heaviest marked fish retaken in 1907 weighed 27 lb., and was caught on August 9, its weight being 282 times greater than when it went to the sea two years and three months previously.

The results disclosed during the season of 1908 were equally surprising. The four marked fish retaken were maidens, revisiting the river for the first time, and were just completing their fifth year of life. The big fish —35 lb.—had been in the sea two years and eleven months, during which period its weight had increased by 430 times, being on the average of about half an ounce per day.

In these experiments the actual age of the fish retaken admits of no possible doubt. Six thousand smolts, all presumably two years old, were marked in the Tay in the spring of 1905; no others were marked in a similar way in any other river or in any other year. The data in calculating the age of these marked fish cannot be impugned; but the evidence upon which Messrs Calderwood and Malloch base their diagnosis of these fish as " maidens " must be sought in another direction.

Shortly previous to the marking operations Mr H. W. Johnston was conducting an independent series of observations higher up the Tay. He first succeeded in establishing the fact that the age of a salmon, its periods of feasting in the sea, of fasting in fresh water, and its act of reproduction, are all registered by a series of rings and lines formed upon the scales as they grow. The exposed part of the scale is almost featureless; the lines of growth are revealed by the microscope only upon that part of the scale—about two-thirds—which is embedded in the skin. Mr Johnston co-operated with Messrs Calderwood and Malloch in watching the result of marking smolts; since then research has been carried on in the Wye by Mr J. A. Hutton, in the Severn by Mr Willis Bund, and in Norway by Herr Knut Dahl, while Miss Philippa Esdaile, of Manchester University, has published some extremely useful results of her examination of scales from various rivers. While it may be taken as certain that the growth and vicissitudes of a salmon do leave a record upon its scales, it would be premature to announce a definite and final interpretation of that record. Some of those engaged in investigating the matter have been bolder than others in arriving at a conclusion; until a more perfect agreement has been come to, it may be well to hold judgment in suspense, for this is a problem which can only be solved by observation upon an extended base of operations.*

The toughest morsel for the ordinary angler and the professional fisherman to digest is the inference that a salmon bearing no spawning mark on its scales must of necessity be a maiden. It has been suggested that this mark is caused by the crushing together of the scale margins when the body of the fish contracts after spawning. Mr Calderwood has ascertained that a female salmon parts with twenty-three per cent of her weight in the act of spawning and Mr Johnston calculates that a spring salmon of 18 lb., measuring 18½ in. in girth, will shrink to 14½ in. in girth after spawning, its length remaining the same—viz., 14½ in. As the number of scales remain the same before and after spawning, it is easy to understand that they get crushed together when the periphery of the fish is diminished so considerably; but it requires further investigation to establish the fact that spawning cannot take place without leaving its mark upon the scales.

*The chief literature on the subject consists of Mr H. W. Johnston's papers in the 23rd and 25th *Annual Reports* of the Fishery Board for Scotland (Part ii, Appendix 2 in each volume); *The Life of the Salmon*, by W. L. Calderwood, 1907; *Life-History and Habits of the Salmon*, by P. D. Malloch, 1910; *The Age and Growth of Salmon*, by Knut Dahl, translated into English and published by the Salmon and Trout Association, Fishmongers' Hall, 1911, and a paper by Miss Philippa Esdaile, reprinted from the Proceedings of the Manchester Philosophical Society, 36 George Street, Manchester, 1912.

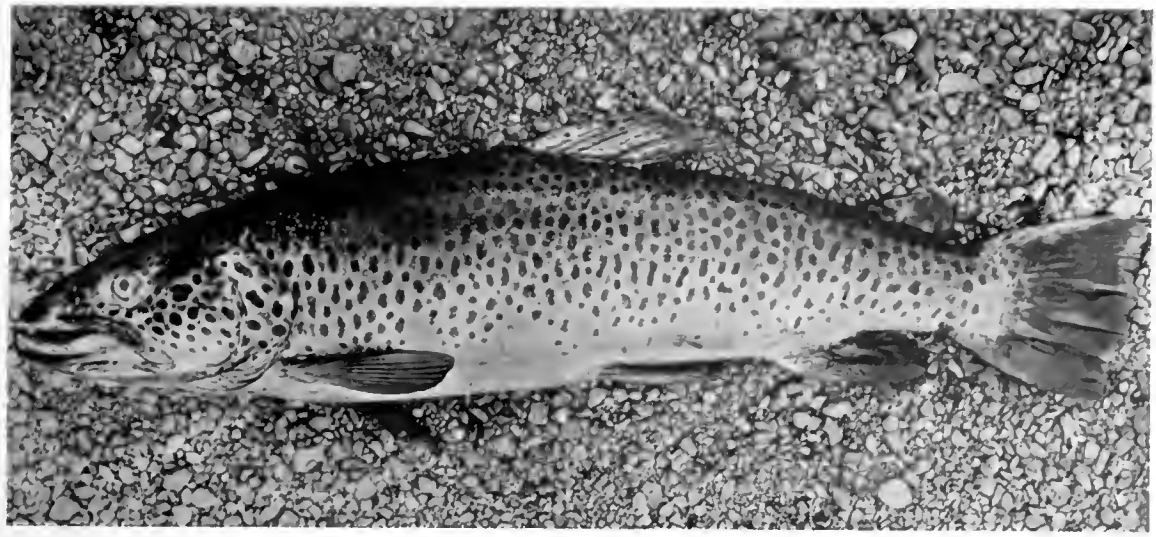

Photo by] [P. D. Malloch.

Fig. 1. LAKE TROUT (*Salmo fario*), so-called *ferox*, 6 lb.
From Loch Veyatie, Sutherland.
See page 99.

Photo by] [P. D. Malloch.

Fig. 2. TAY SALMON, 13 lb.: marked as a smolt, May, 1904; caught as a spring fish, February 15, 1908.
See page 10.

It is founding upon the absence of this mark that Mr Malloch represents a splendid pair of forty-pounders, male and female, as maiden fish revisiting their native river for the first time.*

There is one other point in the seasonal movements of salmon which has not yet received the attention it deserves, though it is one which ought to prove comparatively easy of solution. The question is whether salmon, having entered a river, invariably remain in some part of it until their reproductive functions have been discharged, or do they frequently or exceptionally return to the sea for a time before spawning? My attention was first called to the point about twelve years ago, when I was joint tenant with five others of the whole of the net and rod fishings of the rivers Cree and Minnick in south-west Scotland. We held these fishings for three years, removing all the nets and carefully preserving the water for fly-fishing only. Outside the limits of our tenancy, but within the estuary of the river at Creetown, there is a stake and bagnet fishery belonging to Mr Caird of Cassencary. By an arrangement with Mr Birrell, the tacksman of the fishings, the weekly close-time was extended from thirty-six to sixty hours. Mr Birrell, a very intelligent person, was greatly interested in our scheme for restoring the Cree to its former productivity, which had been brought to a very low state by severe netting of the pools above the tidal waters.

A large number of fish entered the river during the spring and summer of 1900, and the upper waters were very fully stocked. One of our watchers reported to our superintendent that, early in July, the water being very low at the time, he had counted upwards of 120 salmon in his beat on the upper water, being from fifteen to twenty miles above the influence of the highest tides. Then came a spate; after it had run down, all but a few of these fish had disappeared. They could not have run further up without their presence being perceived, because above that point the river changes its character into that of a number of confluent brooks where they must have been more plainly visible than before. The watcher therefore attributed their disappearance to poachers from the Ayrshire coal mines.

July was a rainy month with a heavy run of grilse, whereof I was unable to take advantage owing to absence in Norway. When I returned, Mr Birrell reported that a considerable number of dark fish had been taken in his nets in Wigtown Bay, and spoke of it as a frequent incident at that

**Life History of the Salmon*, p. 40.

season. He entertained no doubt that, although these salmon were not kelts, they had been in the fresh water for some months, and had returned to the sea without spawning.

I was too late that season to obtain more than a single specimen—a male, which I sent on August 25 to the Research Laboratory of the Royal College of Physicians of Edinburgh, where investigations into the life-history of salmon had been carried on for several years. The Committee sent me the following note upon the autopsy; "Total weight, 3,129 grms; ovaries, 67 grms; length, 73 cm.; girth, 31 cm.; depth, 12 cm. No sea-lice, no parasites on gills; stomach and intestines containing yellow mucus; pyloric appendages, very little fat; gall bladder empty, muscle rich colour."

The following summer, 1901, was unusually dry; there was no spate in the Cree between the first week in June and the very end of August; nevertheless, early in August Mr Birrell supplied me with two or three of these dark fish, which I forwarded to the laboratory. Unfortunately, I have never received a report upon them; and I have not had an opportunity of continuing the observation, because our lease of the river was voided by a judgment of the Courts on the death of the lessor, when only three of the term of twenty-one years had expired. But during those three years I saw and heard enough to convince me that what has been termed to-and-fro migration of salmon is a well-established movement.

Moreover, it is a voluntary movement. Even if it were possible that salmon could be washed out of a river by summer floods, there had been no flood to disturb the dark fish taken in the sea in August, 1901. It is conceivable, though improbable, that salmon could be washed out of a rapid, rough Highland river like the Shin or Helmsdale (in both of which a seaward movement of salmon in July and August is a regular phenomenon), for these rivers have no estuary, the Shin discharging into the Kyle of Sutherland and the Helmsdale into the open German Ocean. In the Cree, however, such an explanation of the descent of spring and summer salmon is out of the question, for between the angling water and the sea nets at Creetown, where these fish were taken, the river has to traverse, first the Loch of Cree, a canal-like stretch about three miles in length, and next a winding, muddy estuary eight or nine miles long. It is physically impossible that salmon could be washed out of this river against their will; their descent must have been deliberate and voluntary.

The following extract from the Report of the Research Committee of the Edinburgh College of Physicians suggests a probable explanation of the motives of the seaward movement:

> "It has been generally assumed that the passage of the salmon from the sea to the river is due to the *nisus generativus*. In considering the question it must be remembered that the Salmonidae are originally fresh-water fish, and that the majority of the family spend their whole life in the fresh water. *Salmo salar* and other allied species have apparently acquired the habit of quitting their fresh-water home for the sea in search of food, just as the frog leaves the water for the same purpose. When, on the rich marine feeding grounds, as great a store of nourishment as the body can carry has been accumulated, the fish returns to its native element, and there performs the reproductive act. That the immigration of the fish is not governed by the growth of genitalia and by the *nisus generativus* is shown by the fact that salmon are ascending the rivers throughout the whole year with their genitalia in all stages of development."*

If further investigation should establish the fact that a seaward migration of early running fish before the spawning season is a normal phenomenon in all rivers to which fish of that class resort, then it will appear no extravagant hypothesis that these early salmon, having fared sumptuously for months or years in the salt water, arrive at a period of satiety and repletion, when the system becomes so stuffed with nutriment as to become temporarily incapable of assimilating any more; that the animal's appetite declines and ceases, and that it returns *home* for a period of repose and abstinence. After fasting for some weeks or months, during which the muscle slowly, but steadily, parts with its fat, it feels the need of fresh nourishment, appetite revives, and the fish drops down again to the sea, which habit and experience have taught it to regard as the only source of sufficient provender, there to restore its vigour and vitality before undertaking the exhausting strain of reproduction.

Fifty years ago, or thereby, the late Mr Dunbar came to some such conclusion regarding the movements of salmon in the Thurso. Into that river, which is of very moderate volume, there is a considerable migration of salmon during the winter months. These fish are quite distinct from the ordinary run of small spring fish in February and March. They are much heavier, weighing from 15 lb. to upwards of 20 lb., and Mr Dunbar

*Report, 1898, p. 169.

found that their genitalia were in a backward condition—dormant, so to say. They pass up into the comparatively shallow waters of Loch More, where, if they do not return to the sea in the interval, they must pass ten or eleven months without taking food before undertaking the effort of reproduction.

In 1894 I fished the Thurso during the last week of January, and killed six of these winter fish weighing 18½ lb., 18 lb., 18 lb., 17 lb., 17 lb., and 15½ lb., and two spring fish weighing 8½ lb. and 7 lb. At the close of the month the weather became remarkably warm and bright, the river falling so low that sport failed altogether. My companion being tired of fruitlessly flogging glassy pools, went up to Loch More, broke open the boat-house, and got afloat between 2 and 3 p.m. By 4 o'clock, when darkness comes on at that season in those high latitudes, he had landed with fly four salmon weighing from 16 to 20 lb. Evidently the loch was well stocked with heavy fish; but the experiment could not be repeated, for the syndicate which then rented the Thurso fishings disapproved of winter angling on Loch More, and decreed that in future no line should be cast on it until April 1. They did this in the belief that these large fish intended to remain in the loch throughout the fishing season, and would afford them sport in the pleasant spring and summer season. But would these fish so remain? Mr Dunbar claimed to have proved that they returned to the sea after a short time and stated that he frequently caught them in the nets at the river mouth of which he had control. My subsequent experiences in the Cree, as well as reports which I have received from the Shin and the Helmsdale, accord well with Mr Dunbar's observations.

The problem is one well worthy of further investigation, not only in the interest of abstract science, but because of the practical bearing it has upon the general management of salmon fisheries. It may also modify the conclusions arrived at from the age-marks on scales.

It is with some trepidation that I now approach another problem in the life-history of the salmon , for it is one upon which I hold what may be considered the unpopular view, the opponents of which sometimes express disagreement in terms of greater force than urbanity. The question is whether salmon feed or fast in fresh water. Such naturalists who have given attention to the subject and have had adequate opportunity of studying it *on the spot* have come to an almost unanimous opinion that salmon do not feed, *in the sense of taking regular nourishment*, after leaving the salt water. They found this opinion upon the total inadequacy of many rivers teeming

with salmon to provide food for the multitude, upon the almost invariable emptiness of the stomach of salmon taken in fresh water, upon the collapsed condition of the gall-bladder, and upon the absence of all trace of food in the intestine. Dr Miescher Ruesch, stationed at Basle, 500 miles from the mouth of the Rhine, spent four years in the physiological examination of salmon, in the course of which 2,162 passed through his hands. In all that number there were only two salmon (male kelts) in which he could detect any trace of food. Each of these two contained some scales of a small cyprinoid fish. In the lower part of the Rhine Dr Hoek examined 2,000 salmon, in only seven of which did he detect remains of food. Now the Rhine, unlike such highland torrents as the Awe or the Spey in Scotland, or the Sundal Elv or Aaro in Norway, contains plenty of succulent fare did salmon care to have it for the catching. But they *don't* so care: they arrive from the sea with their tissues stuffed with nutriment and with no appetite for more. They left their native river to seek food; when they have absorbed as much as they can assimilate, they go *home* and turn their thoughts to matrimonial prospects.

It may be urged that the investigations of Messrs Grey and Tosh on Tweed salmon brought out a different result from those of Miescher Ruesch and Hoek on the Rhine fish. So it did. In 1894 and 1895 they examined 1,442 salmon taken in the nets at Tweedmouth and found food in 128, equal to nine per cent. Aye, but of what did that food consist? It was carefully analysed and consisted almost exclusively of the remains of marine organisms—herrings, sand-eels, whiting, haddock, crustaceans and sea-worms. The only exceptions were one caterpillar, four feathers, some blades of grass and a beech-leaf!* These salmon had taken the food before running into the estuary where they were captured.

In connexion with the question how much nourishment a salmon could find, were he in search of it, in any of the rivers frequented by that species, it should be borne in mind that the general stock of salmon in European waters, especially those of Great Britain and Ireland, has been severely depleted. It is reasonable to suppose that in primitive times, before nets and other contrivances had been effectively used, the Atlantic salmon frequented the rivers of western and northern Europe in hordes as prodigious as the kindred species do at this day on those parts of the Pacific coast not yet depleted in the interest of canneries. If, therefore, there is not food enough in our rivers to support the moderate number of salmon

Fourteenth Annual Report, Fishery Board for Scotland, Part ii, Note 2.

that now ascend them, much less could it have sufficed for the enormous shoals which used to invade them long ago.

This is what I have referred to as the unpopular view of this question. The popular opinion is that maintained by many good anglers and practically by all professional fishermen and gillies. Salmon, they say, "come on the feed," just as trout and other fresh-water fish do. If you remark upon the fact that it is virtually impossible to find a salmon in a river with anything in its stomach or intestines, you are met with the assertion that salmon have the power of ejecting food so soon as they feel the hook. If you press the point that salmon taken in the sea are generally distended with food (Dr Kingston Barton took six full-sized herrings from the stomach of a salmon taken off Montrose*), the answer will be—"Weel, I ken naethin' aboot that," or some similarly disparaging observation.

Of course the most plausible argument, and the one most difficult to confute, is based on the undoubted fact that salmon will take minnows, prawns, worms and other baits in fresh water. It can scarcely be doubted that, in exceptional cases, they do seize these objects with the intention of eating them; but my opinion remains unshaken that the vast majority of salmon which take a fly or other moving lure (and how very many fish refuse to do so) are not impelled by hunger or appetite, but simply by a predacious impulse or habit similar to that which causes a terrier to kill a score of rats without the faintest desire or intention of devouring one of them.

We must leave it at that, content with the reflection that, whereas a trout fisher not only must know that trout are feeding before he can hope to do execution among them, but also it behoves him to ascertain what they are feeding on, a salmon fisher runs an equal chance of success, whether he is a believer or a sceptic about salmon feeding in fresh water.

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THE SALMON ANGLER'S OUTFIT

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

THE foregoing chapter having been occupied with fact, we now enter a region wherein fancy may exercise legitimate sway—namely, that in which the salmon angler's equipment is dealt with. For this there is neither law nor limit; the rein may be given to preference, and the utmost that the present writer (or any other) can do is to mention those articles which have best stood the test of his experience.

It is no longer incumbent on the fisherman to comply with the injunction of Dame Juliana Berners (or of whomsoever was the actual author of the delectable "Boke of St Albans"): "Yf ye woll be crafty in anglynge, ye must fyrste lerne to make your harnays." There are plenty of good tradesmen to save you that trouble. On the whole, perhaps, the rod deserves first consideration, for it is only in Lover's rollicking extravaganza, "Handy Andy," that I ever read of anybody going salmon-fishing without one. Moreover, I am not qualified to speak from experience of salmon fishing other than with the fly (never having killed but two salmon with any other lure, one of these fish having been taken when spinning for "ferox" in Loch Arkaig), and in fly-fishing the rod is of supreme importance.

In rods, as in other human affairs, fashion changeth, and there has been considerable modification in the material, length and balance of salmon rods within the last half century. Before considering modern developments, will the reader refresh himself by perusing once again the prescription for rod-making in the aforesaid "Boke of St Albans," the oldest treatise on angling in the English language?

> "Yf ye woll be crafty in anglynge, ye must fyrste lerne to make your harnays—that is to wyte your rodde, your lynes of dyvers colours. . . . And how ye shall make your rodde craftly, here I shall teche you. Ye shall kytte betweene Myghelmas and Candylmas a fayr staffe of a fadom and a halfe longe, and armgrete,* of hasyll, wyllowe or ashe; and beyth hym in an hote ovyn, and set hym evyn; thenne let hym cole and drye a moneth. Take thenne and frette hym faste† with a cockeshote corde‡ and bynde hym to a fourme

* As thick as your fore-arm. † Bind it tight.

‡ The cord of which nets for woodcocks were made, or by which the nets were secured.

or an evyn square grete tre. Take thenne a plummers wire that is evyn and streyte and sharpe at one ende; hete the sharpe ende in a charcole fiyre tyll it be whyte, and brenne the staffe therewyth thorugh, ever streyte in the pythe at bothe endes tyll they mete. Any after that, brenne hym in the nether ende wyth a byrde broche* and wyth other broches eche gretter than other, and ever the grettest the laste, so that ye make your hole aye tapre well. Thenne let hym lye styll and kele† two dayes. Unfrette hym thenne and lete hym drye in an hous roof in the smoke tyll he be thrugh drye. In the same season take a fayr yerde of grene hasyll and beth him evyn and streyghte, and lete it drye with the staffe. And whan they ben drye, make the yerde mete unto the hole in the staffe, unto halfe the length of the staffe. And to perfourme that other halfe of the croppe, take a fayr shote of blacke thorn, crabbe tree, medeler or of jenypre kytte in the same season, and well bethyd and streyghte, and frette theym togyder fetely soo that the croppe may justly entre all into the sayd hole. Thenne shave your staffe and make hym tapre well. Thenne vyrell‡ the staffe at bothe endes wyth longe hopis of yren or laton§ in the clennest wise, wyth a pyke in the nether ende fastnyd wyth a rennynge vyce to take in and oute your croppe. Thenne set your croppe an handfull within the over ende of your staffe in suche wise that it be as bigge there as in ony other place above. Thenne arme your croppe at thover ende downe to the frette wyth a lyne of vi heeres, and dubbe the lyne and frette it fast in the toppe wyth a bowe to fasten on your lyne. And thus shall ye make you a rodde so prevy that ye may walke therwyth, and there shall no man wyte where abowte ye goo. It woll be lyghte and full nymbyll to fyshe wyth at your luste."

He who has experienced the zest added to killing a salmon when this is done with a fly of his own manufacture, may judge how greatly the pleasure must have been enhanced for him who had constructed his own rod.

The chief difference between a modern salmon-rod and one of the kind in favour a generation ago consists in the greater pliancy of the former, its heavier top and lighter butt. Ash and hickory, the stand-by of our sires, for butt and middle joint, with lance-wood and bamboo for the top, have gone clean out of vogue, and the best salmon-rods are now

*Skewer. †Cool. ‡Ferrule. §Brass or bronze.

SALMON FISHING
A.D. 1830.
From an old print.

PLATE V.

[illegible] that [illegible] [illegible] the sharpe ende in a [illegible] the staffe [illegible] [illegible] fyll they mete. And [illegible] burde broche[illegible] and [illegible] ever the grettest [illegible] Theme let [illegible] thenne and lete [illegible] through drye. [illegible] and beth [illegible] staffe. And whan [illegible] in the staffe, [illegible] that other [illegible] tree, [illegible] and [illegible] may [illegible] and make [illegible] ende with longe [illegible] a pyke to the nether [illegible] take in and oute your croppe. [illegible] within the over ende of your [illegible] in ony other place [illegible] downe to the frette [illegible] and frette a fast in the [illegible] And thus shall ye make you [illegible] and there shall no man [illegible] be lyghte and full nymbyll to fyshe [illegible]

[illegible] added to killing a salmon when [illegible] his own manufacture, may judge how greatly [illegible] enhanced for him who had constructed his [illegible]

[illegible] between a modern salmon-rod and one of the kind [illegible] consists in the greater pliancy of the former, [illegible] Ash and hickory, the stand-by of our [illegible] with lance-wood and bamboo for the [illegible] and the best salmon-rods are now

made of greenheart throughout. In pronouncing this opinion I do not wish to decry the split-cane rods with steel core, a comparatively recent innovation of American origin, but now regularly manufactured by British makers. They are beautifully finished articles, but I have never been able to detect their superiority in performance to good greenheart in any single respect, and consequently fail to see the merit of paying three or four times the price of a greenheart for the more elaborate weapon.*

Of late years opinion has veered in favour of shorter rods than were wielded by our salmon-fishing sires. I was brought up to consider 18 ft. as the regulation length, and continued for many years to suffer unnecessary fatigue in consequence. Francis Francis, writing in the 'sixties, prescribes a rod 16½ to 17½ ft. long "for a man of short stature and not too robust frame; for a man of moderate capacity, from 17 to 18½ ft., or a little more; for a tall, strong man, from 18 or 18½ ft. to 20 or even 21 ft. I have known as much as 22 ft. used."† He adds a story sufficiently terrifying to scare some people off salmon fishing altogether, to wit, that the Master of Lovat of that day used to wield a rod of 24 ft. in the Beauly !

Now I learnt as a youngster more about angling in general from Francis's pages than I ever did from any other book, except Stewart's "Practical Angler." Francis fished in many waters, rambling north and south, east and west, hospitably received in many a lodge, gossiping incessantly and picking up yarns and miscellaneous information, much of it highly worth remembering. But there is only one way of accounting for an experienced fisher like himself prescribing such immoderate length in salmon-rods, namely, that the weight was distributed differently in the days of ash and hickory from what it is in the modern weapon of greenheart. There is now far more weight put into the upper joints than formerly, enabling the angler to deliver a heavy plaited line in the teeth of a strong wind in a manner impossible with the old-fashioned light-topped rod and silk-and-hair reel-line. A 16-ft. greenheart with powerful top may be backed to lodge a fly at quite as great a distance as the older and longer rod could accomplish.

But there has come to pass another and most commendable innovation through the invention of adhesive tape. It was always known and admitted that, weight for weight and bulk for bulk, a rod with spliced joints was

*It is different with trout-rods. For a single-handed trout-rod there is nothing to equal good split cane.

†*A Book on Angling*, p. 294.

sweeter in hand, more powerful at work and less subject to accident than one with ferruled joints; but the greater convenience and quickness in setting up a ferruled rod brought ferrules into almost universal use. To bind up splices with sticky cord at the beginning of each day's fishing, and to unbind them in the evening, was a trial to one's patience. It was worse when, on cold mornings, the cord was not sticky, for then the lashing was apt to prove insecure.

The disadvantage of ferrules was far more serious. If you forgot to bind the wire loops together the middle or top joint would be sure to slip out in the act of casting. If you did not so forget, the ferrules had a nasty trick of refusing to surrender their hold when the rod had to be taken down. Worst of all, the top joint was very apt to snap short off immediately above the ferrule if a sudden strain came upon it, such as hooking a fish unexpectedly or catching something in the back cast. Then what a treat was prepared for the angler. He was pretty sure to have come away from home leaving his pliers reposing in the tackle box; fingers, nails, teeth—all may have to be employed, with interjections of corresponding variety and force, upon the wretched stump sticking half an inch out of the ferrule.

Oh, *j'ai passé par là* several times! I remember a fish taking my fly under the bank in the swirly Marrable pool on Helmsdale, just as I was withdrawing it for another cast. Crack went the top joint close to the ferrule. The fish ran about for a while, till the broken top slid down the line and hit him on the nose. Away he went at high speed and back came the top joint and the fly without him!

I have written about ferrules in the past tense, as if they were quite obsolete. So they are in truth, albeit there be those anglers so conservative as to persevere with them, just as there are elderly ladies who have never been in a motor car. But I have never met with anybody who has gone back voluntarily from the use of a rod spliced with adhesive tape to one fitted with ferrules. It is quite feasible to make the change upon an old and favourite rod by sacrificing about a foot in length. I have a good greenheart, originally 18 ft. long and ferruled, from which the ferrules have been removed and splices substituted, reducing it to about 16½ ft. It is now equally serviceable as before the operation, and leaves one at the end of a long day with a far less disagreeable sensation in back, shoulders and arms than it did when of its pristine proportions.

Splicing has not yet been applied to split-cane rods, though probably if anglers who prefer that material were to insist upon having spliced

joints, the ingenuity of manufacturers would prove equal to meeting the demand. At present the parts of a split-cane are united by some kind of patent lock-fast joint, which is free from all the objectionable qualities of the old slip ferrules, except that inseparable from the insertion of rigid lengths of metal in a rod which ought to possess uninterrupted gradation of flexibility from butt to point.

The rings which convey the line from the reel to the point of the rod are the source of some trouble. In the old pattern of salmon-rod they used to hang loose, but standing rings are now almost universal. There can be no doubt that they are preferable, were it only for the advantage they afford of allowing loose line to be released from the hand in order to obtain greater length in casting; but, being rigid, they have an objectionable propensity to getting knocked off in contact with rocks in fishing or with heavy luggage in travelling. The best are of the upright "snake" pattern, made of hardened steel lacquered.

Owing to the steel-like elasticity and strength of greenheart, the butt is made far more slender than was possible with ash or hickory; wherefore a sheathing of cork over the grip will be found a great addition to comfort in handling.

The rod may be stained to any colour, or left the natural light yellow of the greenheart. Each one may indulge his prepossession or prejudice; for my own part I have a preference for a very dark olive stain.

A good rod ought to last a lifetime if reasonable means are taken to keep it good. Do not tie it up too tightly in its cover, nor lean it up against a wall during the close season. Every careful fisher should have a rod-rack in some cool quarter of his house, where the rods may either be suspended from hooks by loops at the end of the covers, or rested horizontally on pegs. Never allow a good rod to become an indifferent one for want of a fresh coat of varnish; and if you wish to avoid disappointment and discomfort, let this be applied by a professional tackle maker of repute.

OLD AND NEW REELS

The reel is second in importance to no part of the angler's outfit, for if that goes wrong all is wrong—probably beyond repair at the waterside. Izaak Walton never saw a fishing-reel, so it may have been just as well for his peace of mind that, as may be inferred from the nonsense he wrote

about salmon-fishing, he never hooked a salmon; but he had heard of persons who "use a wheel about the middle of their rod or near their hand, which is to be observed better by seeing one of them than by a large demonstration of words."*

The evolution of the salmon-reel was a slow process. A century and a half after Izaak Walton had made his last cast—to wit, at the beginning of the eighteenth century—it had assumed a character, on the Tweed at least, which it would puzzle a modern practitioner to manipulate. The reel was attached to a broad leathern belt round the angler's waist, whence it was termed, *Scottice*, a "belly pirn." It was not long before some ingenious mortal hit upon the notion of attaching the reel to the rod instead of to his person. The pattern in vogue continued to be a long-barrelled, shallow affair with which it perplexes one to understand how our forbears were content to set to work, and how it should have taken them so long to perceive that winding power might be increased by enlarging the diameter of the drum. They tried "multipliers" first, which quickened the revolution by a small ratchet wheel working upon a greater one; but they soon found out that what was gained in speed (when all worked smoothly) was lost in power, and that the strain of a heavy fish was exceedingly apt to cause a jam at the very moment when only free play could avert disaster. "Whatever you do," wrote Scrope (whose name, dear reader, deserves reverence from all good anglers and must be pronounced as if written *Scroop*), "whatever you do have nothing to say to multiplying reels." Doubtless he had used some strong language about them, for he goes on to describe how he hooked a salmon in the Boldside water on Tweed which "executed some very heavy runs, and so disconcerted the machinery of my multiplier as almost to dislocate the wheels. The line gave out with starts and hitches, so that I was obliged to assist it with my hands. To wind up it resolutely refused, so that I was compelled to gather in the line in large festoons when it was necessary to shorten it, and again to give these out when the fish made a run." Scrope got his fish in the end, but not until *three hours* of a good fishing day had been consumed in the process, which, with more efficient gear, might have been accomplished in ten minutes. The adventure bore good fruit, for Scrope tells us how thereafter he caused a reel to be made on a better design with a large cylinder to increase the winding power. Thus the first approach was made to the modern salmon-reel, which has since been perfected by

*_The Compleat Angler_, chap. vii.

increasing the diameter of the side-plates, shortening the axle to bring them nearer together, and finally by abolishing the free lever and attaching the handle to one of the plates, which is made to revolve. A few subsidiary improvements have since been devised without interfering with simplicity of action, the most meritorious being the insertion of a screw check on the fixed plate, whereby the action can be rendered stiffer or easier at pleasure. Some makers cause the plate to revolve on ball-bearings, but for my part I can perceive no advantage in this refinement, having fished pretty constantly for three-and-forty years with one simple check reel purchased from a maker now no more, the late Mr Paton of Perth. In choosing an instrument which may be expected to last, like this one, for half a century, the prime cost becomes of secondary importance; so, if the angler consults his own comfort in fishing, he will not grudge a little extra expense in purchasing a reel made of alumin—an alloy of aluminium—which is considerably lighter than brass or gun-metal. Let no one of common prudence be seduced into buying a cheap reel, which is pretty sure to betray him in the heat of a contest. And when he has got the article, let him bestow a little care in keeping it clean and properly oiled.

I was a spectator one summer morning of a bitter tragedy. We were sitting—a friend and myself—in the verandah of a Norwegian fishing lodge. We had been fishing our respective beats since 6 a.m.; it was now 10 o'clock, the hour when the sun, escaping from behind the Romsdalhorn, flares right down the river till he passes behind the jagged crests of the Tröldtinder about 4 p.m. Angling is suspended in the presence of Phœbus, the off-time being devoted to baths, breakfast, siesta and a late luncheon, until fishing is resumed at 4 o'clock and continued till 10 p.m., which brings one to the supper table. On this particular morning the third member of our party, a lady, having got astir not quite so early as ourselves, had remained out a little longer. We could see her rod flashing rhythmically in the sun as she fished a pool near the house from a boat, but the boat and its occupants were hidden from our view by the river bank. Suddenly the rod assumed the form of an arc. "By Jove! she's in a fish!" quoth the lady's spouse, and away we trotted across the intervening patch of meadow to witness the sport. By the time we arrived on the scene it was in process of being transferred to another pool; for the salmon, a very heavy one ("Megget stor lax," as old Tostern afterwards observed with a mournful shake of his head) was

running hard down stream, faster than the boat could follow. Already full one hundred yards of line were out; the point of the rod was dangerously low. "Give him line!" we shouted from the bank. "I can't," was the despairing reply, "the reel's gone wrong."

It had indeed; it was hopelessly jammed. The tackle was good enough, and stood several violent wrenches, but the strength of the stream and the weight of the fish combined to overcome it; the rod-point was dragged under water for a fateful moment; next moment it reappeared with a piece of limp line dangling from it.

The reel, a new one, was afterwards submitted to autopsy, which revealed no defect in make or material, but a total absence of lubricant. Revolving rapidly after the racing fish, the metal had become heated, the spring check ground the racket into fine chips which choked the action, and thus a fine salmon—perhaps the salmon of that season or of many seasons—was lost through lack of a drop of oil!

Ninety-nine fishermen out of every hundred attach the reel so that when it is under the rod the handle is to the right. I would strongly counsel the beginner to get into the habit of fishing with the reel put on the other way, with the handle to the left. Once this habit is acquired, the action becomes automatic of turning the rod directly a fish is hooked so as to bring the reel uppermost with the handle to the right. The result is that, while playing the fish, the line lies along the smooth surface of the rod instead of being supported only on the rings with correspondingly increased friction.

It was the neglect of this precaution which probably brought to a tragic conclusion the adventure so graphically described by the present Bishop of Bristol in the "Cornhill Magazine" for 1869. He was harling with a minnow the broad tidal water near the junction of the Earn with the Tay, where he hooked a very large salmon about half an hour after noon. It took him far down into the firth and remained master of the situation for about four hours. Then a strand of the reel-line parted about twenty yards from the end "through the constant friction of the wet line running through the rings for so many hours." They managed to get the fish to lie quietly under the boat while the old line was knotted to a fresh one on another rod. It was pitch dark by this time, and the contest was resumed as they drifted up channel towards Elcho. It finished about midnight by the hooks being pulled off the tackle and the salmon going free.

Some may suppose that the position of the reel had nothing to do with the catastrophe. I maintain that it had much to do with it. Had the first line rested on the rod it would not have been frayed by the rings. After the fresh line was fastened to the other, the knot prevented the bishop from shortening it in fighting the fish, otherwise it is impossible to believe that a salmon, handled with vigorous discretion, would not have been forced to surrender far within the limit of eleven hours during which this one maintained the fight, and which proved too much for the endurance of the tackle.

This brings us to consider the line itself, which, like other parts of the equipment, is now very different in make and material from that which contented anglers of an older time. In my youth, now sadly remote, I have seen lines used of horsehair pure and simple; then came into vogue a mixture of silk and hair; nowadays one never dreams of using any but pure silk, plaited and dressed with a waterproof compound of oil, wax and resin. Such lines are made either with a perfectly smooth glassy surface, or with one slightly rough or granulated; I prefer the latter, and a line giving a square section rather than a round one; but that may be mere fancy. The really important matter is that the line should neither be too light for cutting its way through a gale nor so heavy as not to respond readily to the rod lifting a good length of it off the water.

The adept in shooting out a few yards from his hand in the last motion of the cast will find that manœuvre greatly facilitated by the following process. Rub twenty or thirty yards of the free end of the line lightly with fisherman's white wax (a compound of beeswax and resin); then put on an old pair of gloves, take a lump of black lead, such as your housemaid doth make the grate to shine withal, and rub it over the waxed surface. It is a dirty operation, but it confers upon the line an enduring polish which causes it to slip through the rings in the sweetest manner imaginable.

Forty, or at most fifty, yards of this heavy fore-line, duly tapered, will suffice, spliced at the inner end to 100 or 150 yards of the admirable material known as tarpon line. Although the bulk of tarpon line is less than one-fourth of the heavy line, in strength it is fully equal to it. It is too light to use in casting, but that is the very quality which renders it so invaluable as backing to the heavy fore-line. In a big river a bold fish will often take out 100 or 150 yards of line; if that length consisted entirely

of heavy line, the strain might prove too great for the casting line or the hold of the hook. It is an immense advantage to have the use of a thin line as strong as any other part of the tackle.

It may seem impertinent to advise the angler to make sure that the inner end of the line is securely fastened to the drum of the reel; but the following incident may serve to show that such precaution is not altogether superfluous. We were fishing—three of us—the Logen Elv, commonly called by English visitors the Sand river, because it flows into the Sandsfjord beside the little town of Sand. It is a fine sweeping river, and just above the village it tumbles over the Sandsfos, in surmounting which shoals of salmon make a fine display in athletics. Below this foss stretches a long streamy pool with a name pronounced Osen, which I fancy must be written Aasen according to Norse orthography. It is a favourite haunt of heavy fish and opens straight into the fjord, whither salmon not infrequently make their way when hooked. One of our party, of mature age, but a neophyte in fishing, conceived a strong predilection for this pool, by reason of it being better adapted for bait fishing than for the fly, wherefore he was absolved from the irksome necessity of casting. When Aasen came in this gentleman's beat, he would spend long hours dangling a prawn out of a boat, and certainly, after he had acquired some little experience in handling a fish, he was not wont to dangle it in vain.

One evening, however, he returned sadly crestfallen. He had hooked a very large salmon in Aasen which made tracks straight for the salt water. Fast as they could follow in the boat, the fish went faster; by the time they were out upon the open fjord there remained but a few turns of backing on the drum of the reel. Even these were soon torn away, and then—the drama closed in catastrophe. The line had not been knotted to the drum; the angler was left with an empty reel in his hand and the salmon went free—if free it could be deemed, with a cruel prawn tackle in its jaws and 200 yards of line towing behind.

Mention of Aasen brings to mind another contretemps of which it was the scene. In this case the angler was not to blame for what was sheer misadventure. He had hooked a large fish in Aasen which sailed steadily and stiffly out into the fjord. Arriving there, it appeared to lie down and sulk; no amount of pressure from any direction availed to budge it. After prolonged attempts without any result, it was decided that either the fish must be had out somehow or the tackle sacrificed. Bidding the boatman

take the line in his hands and haul steadily upon it, Mr T—— stood by with the rod ready for a rush on the part of the fish. It yields! Slowly, foot by foot, the line is recovered, but the fish behaves strangely. So far from making a rush, it hangs heavily, tugging vigorously as it slowly approached the surface. The suspense becomes trying, for the next phase of the contest must be violent. At length the secret of this prolonged inertia comes out. There is brought to the surface no salmon, but—a coil of barbed wire! The salmon in its flight had bolted through this obstacle lying on the bottom of the sea, left the hooks fixed in it, and the coils unwinding had caused the lifelike tugging on the line which deceived the fisherman.

After the reel-line comes the casting-line, for which silkworm gut has long been unchallenged as the best material. The challenge, however, has come at last, and from a very formidable quarter; but of that presently.

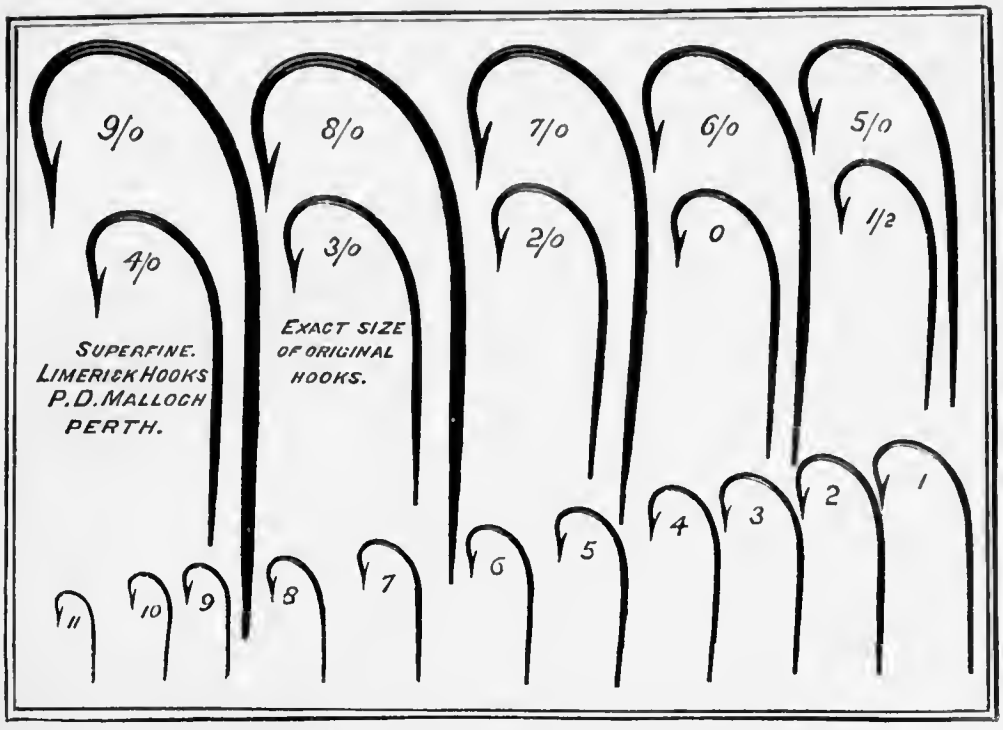
Silkworm gut has many virtues; at its best it is strong, durable and, being translucent, not easily detected by the fish. Salmon-fishers generally buy casting-lines ready made up, the usual and best arrangement consisting of a few lengths of treble-twisted gut to continue the taper of the reel-line, the rest of the cast being of single gut. For early spring fishing the entire cast may be of treble gut; machine-twisted being, in my opinion, far preferable to hand-twisted, because in the machine-twisted the different lengths are woven together without knots. Tackle-makers, unless otherwise instructed, usually make up casts to measure nine feet in length. For early fishing at least this is one-third too long; anything beyond six feet merely increases the difficulty of casting in rough weather and affords no compensating advantage. Even for summer fishing and autumn fishing in fine weather I prefer not to fish with more than seven feet of gut cast, which is quite enough to keep the reel line away from the fish's line of sight.

Despite its many virtues, silkworm gut has also its defects. So long as water and weather allow of treble gut being used, nothing can be more satisfactory in every respect. I think we generally abandon it too soon and with too little reason. Probably thin gut treble twisted is not more visible in the water than single gut stout enough to hold a salmon; it is quite as strong and, if machine-twisted, is without knots, which are always objectionable and are generally the weakest points in any trace. But in accordance with an unwritten law, after the rough work in spring is over, treble gut is reserved for that part of the cast which is nearest the reel-line.

Single gut is a beautiful material; but, like certain other beautiful creatures, it is treacherous. It retains its beauty in old age; but all its virtue departs with youth. Treble-gut casts may be trusted through three or four years, but an infinity of discomfiture would be avoided if every scrap of single gut were burnt at the end of every fishing season. It costs something to do this, but probably not half as much as a man's cartridges in a single day's cover-shooting, which he blazes away without considering the expense. The best economy in single gut is to buy or make it in casts of not more than 4½ feet which can be looped to 2½ feet of treble gut next the reel-line. Then, if you are lucky in getting the right stuff, it may last you through the best part of a season. I have landed forty-six salmon on one single gut-cast; on the other hand, I have lost fish which were fighting in a most reasonable manner through new, or at least newly-bought, single gut parting in an unaccountable way.

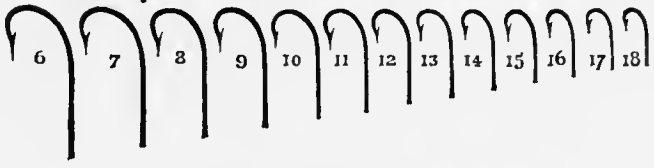
If the angler allows his gillie to put together his gear, it is ten chances to one that he will find that the gut casting-line has been attached to the reel-line by the clumsy expedient shown in Fig. 2, Plate VI. I could hardly believe my eyes when I read the recommendation of this fastening at page 26 of "Dry-Fly Fishing," for that excellent work is from the pen of Mr F. M. Halford, a master of the craft of trout-fishing, well known to readers of the "Field" newspaper under the pseudonym of "Detached Badger." *Aliquando dormitat Homerus*—the greatest men have their moments of weakness; it must have been in one of these that this high authority was lent to the lubberly hitch which local fishermen are so prone to use. The workmanlike way of attaching the cast is to pass the free end of the reel-line through the loop of the gut and to form the indispensable figure-of-eight knot (Fig. 1, Plate VI). Mr Halford's hitch is safe enough, but it is not nearly so neat and, in fishing fine water, is apt to make an undesirable wake.

Now as to the substitutes for gut above referred to. First as to the material known as Talerana, which is understood to be some preparation of silk. It is absurdly cheap, costing about 2s. 6d. for fifty yards; it is of extraordinary strength, and it is knotless. I realized its merits in fighting a twenty-pound Spey salmon which was bent upon running down stream into a mass of timber that lay across the fairway. Had the fish succeeded, he must have smashed the line; so I thought that if there was to be a smash, it should take place in the open, I held him with all my might, exerting a force which would have been impossible with single



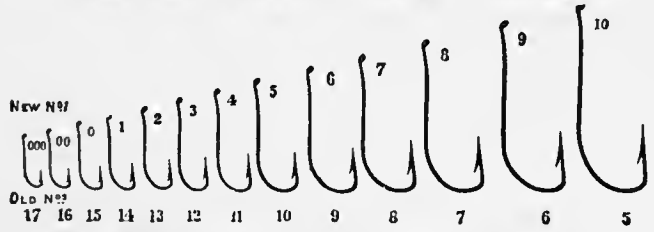
LIMERICK SCALE FOR SALMON HOOKS

Superfine Limerick Hooks



Round Bend Hooks

Pennel Limerick Eyed Hooks



Sneck Bend Turn-Down Eyed

SCALE OF TROUT HOOKS

gut, and—I conquered. I thought I had found perfection at last, and before starting for Norway in 1911 I bought some fresh coils of Talerana. It betrayed me. Twice I was broken on the rise, the rupture taking place at the figure-of-eight knot uniting a very small fly with a metal eye to the cast.

That was enough to shake anybody's faith, and I returned to single gut. I had only the previous season's casts in my book, but they looked perfectly fresh and strong. Twice before the end of that season I was broken again, not on the rise, but in fair play with fish in swift streams.

The next material I tried was Yarvon fibre, which behaved beautifully. It is as strong, as cheap and as knotless as Talerana, and, so far, I have had no accident with it. On one occasion, fishing the Helmsdale, I hooked a bush on the far bank. Unable to free the hold, I had to take the line in hand and pull off. It took a very strong pull—the Yarvon eventually parting at the knot of the loop into which the reel-line was fastened. That determined me in future either to have the loop on the reel-line, and attached the Yarvon to it with a figure-of-eight, or to have the loop on the Yarvon securely whipped and varnished. Now a casting-line of single gut may cost anything from 4s. up to 15s. The loss of such a cast would be considerable. In the case of Yarvon it was exactly 2½d.!

I was well pleased with the experiment. Yarvon showed advantage over Talerana in that the end to which the fly has to be attached does not fray out. But a few days later I received a damper in the shape of a letter from a friend on Speyside who had lost a fish through Yarvon breaking at a knot accidentally formed in casting. I instituted experiments immediately with a steelyard upon Yarvon dry and Yarvon soaked, with the startling result that it broke at a knot under the following strain:

Medium salmon, 5½ lb. dry, 6 lb. soaked.

Strong salmon, 6 lb. dry, 8 lb. soaked.

Obviously, this is not good enough. It is true that nobody can exert a strain of 4 lb. upon the line with a 16-ft. rod, but the sudden wrench of a heavy fish in strong water may easily do so for a moment. Bar knots, I consider Yarvon splendid material for casting-lines, and I intend to continue using it till I come to grief; but a very sharp look-out will have to be kept against knots in casting.

In the matter of hooks the fisherman has the choice of a considerable variety of bends or shapes, but the exact pattern is of far less importance than the quality and temper of the metal. Many a good salmon

has been lost through the hook snapping off short behind the barb. It is a trite saying that the strength of every object must be gauged by its weakest part, yet how often does one see flies tied upon hooks that have been thinned away in forming the barb. It requires but a moderate exercise of intelligence to convince one that the wire should be as thick at that particular part as in any other; and, if foresight should fail to warn one of this, experience will be sure to enforce the lesson, for it is immediately behind the barb that fracture most commonly takes place, whether in a fish's mouth or by striking a stone in casting.

It is not easy to decide which is most objectionable—under-tempered hooks that bend, or over-tempered hooks that snap, under strain; but it is quite within anybody's power to avoid both of these defects by purchasing from tackle-makers of repute, who will not supply any but hooks of the best manufacture and submit each hook to a separate test. There are two or three firms of hook-makers of so good reputation that their names alone are guarantees of excellence of quality, but there is one respect in which the angler's discrimination is required, namely, in the proportion the barb is made to bear to the bend. It is the custom of manufacturers to maintain the same proportion in all sizes of hook, thereby misinterpreting the true function of the barb, which is to prevent the withdrawal of the point after it has penetrated. A small barb effects this just as surely as a large one, and has the advantage of being much more likely than the large one to bury itself in the thin cartilaginous, muscular, or membranous layers which protect the bones of a salmon's mouth. The exaggerated barbs which one sometimes sees, especially in hooks of the Limerick bend, must considerably interfere with the chance of firmly hooking a fish.

To make what I mean clear I have taken from my box two old flies, both of which have landed several spring salmon, the hook of one having an exaggerated barb (Fig. 3, Plate VI), that of the other a moderate one (Fig. 4). It will be seen how much more readily the smaller barb may be buried than the larger one; it might with advantage be made even smaller; for a barb, however small, is quite enough to retain a good hold.

Provided the shank is not too short or the barb too big, the pattern of hook may be left to the angler's discretion. I suppose that in salmon fishing there are 100 Limerick bend hooks used for every one of other patterns, and, subject to the conditions above mentioned, there is perhaps none better. Many years ago, before I took to using double irons,

I felt dissatisfied with the performance of Limerick hooks and gave the Sproat bend a thorough trial. It was claimed for the Sproat that from the point of the hook not being ranked outwards, the line pulled at a flatter angle than with the Limerick, as shown in Fig. 5, whereby the point was more likely to be driven home than to scratch the fish's mouth. I devoted ten days' consecutive fishing to testing (1) the Limerick or quasi-Limerick in common use in Scotland, (2) Messrs Hutchinson's Kendal Limerick, which is more finely barbed, and (3) the Sproat bend. The result stands as follows in my fishing book, having been carefully noted at the time. K. stands for "killed," H. for "hooked and lost," R. for "raised, and perhaps pricked."

No. 1. K. R. K. R. K. K. H. H. R. R. R. H. K. R. R. K. R. R. H. (line broke), R. H. (hook broke).

No. 2. K. R. R. R. R. R. K. K. H. R. R. R. K. R. R. R. R. H. H. R. K. K. K. K. K. K. K. H. H. R. R. R. R. K. H. (hook broke), K. K. R. K. K. R. K.

No. 3. K. K. K. K. K. R. K. R. R. K. (foul hooked), H. (hook broke), R. K. H. K. H. K. R.

In this trial the Sproat certainly came out best. Out of eighteen rises it killed ten, lost three (one from a broken hook) and missed or pricked five.

The Kendal Limerick out of forty-two rises killed seventeen, hooked and lost seven (one from a broken hook), missed or pricked eighteen.

The Scottish Limerick out of twenty rises killed six, hooked and lost five (line broken once and hook once), missed or pricked nine.

The hooks ranged from 5/0 down to 6, according to water and weather. In consequence of this experience I continued to use Sproat hooks for several seasons, until I became a convert to double hooks in any sizes from 3/0 downwards. For single hooks above that size I do not think there is much to choose between good Limerick and Sproat.

The question is often debated whether a salmon fly should be dressed on a single hook or a double one. Opinion is much and deeply divided on the subject; but, on the whole, it gravitates in favour of double hooks for small flies. Objectors allege that one hook is apt to act as a lever to prise out the other, but that is impossible if the point has gone home over the barb. The fact is that a percentage of fish will free themselves whether from single or double hooks, and one may feel it safer having two hooks in a heavy salmon than when the connexion depends on a single

wire. Flies look much neater dressed on single hooks; but salmon are not trained as art critics; and personally I never hesitate in preferring double hooks in sizes from 8 up to 3/0 in the Limerick scale—that is, from $\frac{7}{10}$ in. up to $1\frac{1}{2}$ in. long. Above that size there is no advantage to be had from double irons, and much inconvenience in casting. I have come to the further conclusion that the Pennel bend is better than the Limerick, taking a wider grip and penetrating more readily.

There remains the question, Which is best—a metal eye on the hook or a gut loop lashed to it? The advantage of a metal eye is that it will outlast any combination of feathers, fur and silk, whereas the gut loop is always the most perishable part of the fly. One boggles over burning old flies, yet how bitterly one has sometimes to repent that the sacrifice was not made in due time. During the spring of 1912 that lesson was well rubbed in for me. When fishing the Gordon Castle water on the Spey in February, I had brought two different fish under the gaff; on each occasion the salmon was floundering in the shallow water and the gillie was waiting till it was still to deliver his stroke; on each occasion the gut loop drew out of the dressing and two good spring salmon went free. Now these were large flies supplied by a firm second to none in the land for excellence of material; one of them, I admit, had been six or seven years in my box; but the other was a maiden Jock Scott, which I had only kept a couple of years. An experience such as this inclines one strongly to resort to metal eyes, and, on the whole, perhaps they are best, but it behoves one to be very careful in fashioning the knot that secures the fly to the casting-line. There is only one knot worthy of confidence for that purpose—the figure-of-eight, to which I have had occasion to refer so often that it is proper to give an enlarged plan thereof. It is shown in Fig. 3 as viewed from above, and its whole security depends upon the bight A resting *above* the loop of the fly, and not under it or outside it at B, when the knot is drawn tight. The free end C may be snipped off pretty close after drawing it tight.

Fishermen differ as to which is the best knot used for attaching the fly to the cast. I have no hesitation in pronouncing this figure-of-eight knot to be *the only* perfect—the only safe one. It has the subsidiary advantage of being very easily undone when the fly has to be detached from the cast. It is a little difficult to acquire the knack of making it with reasonable rapidity, but once the knack is acquired the angler will never resort to any other.

Fig. 1.

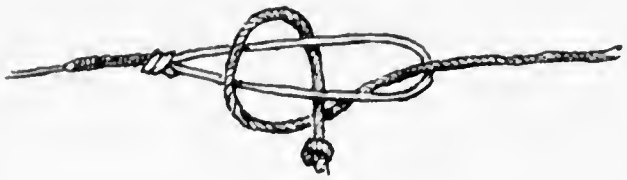
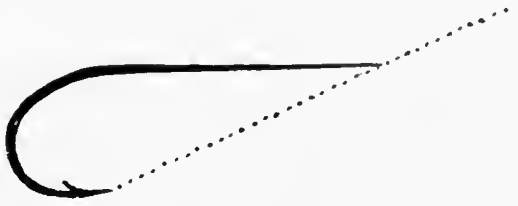


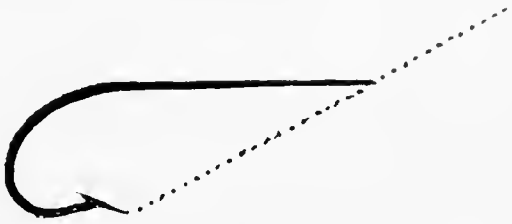
Fig. 2.

Fig. 3.

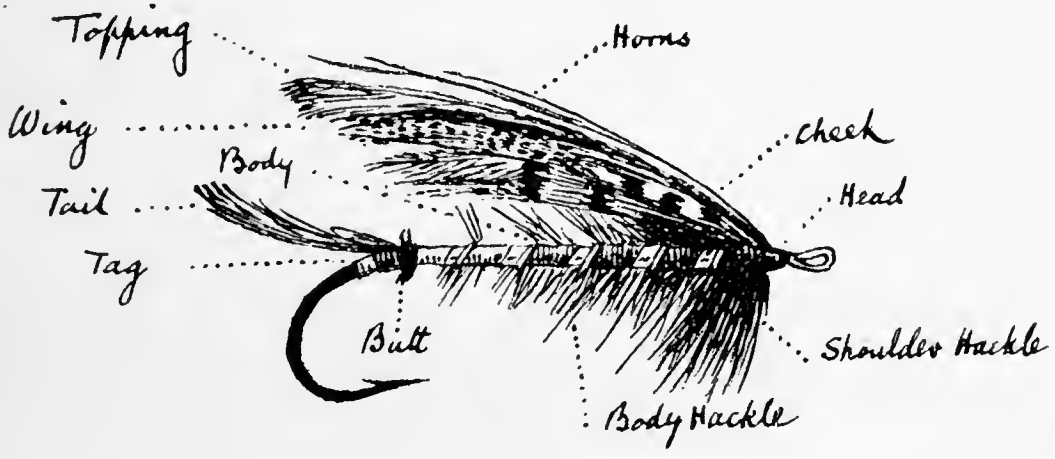


Sproat Bend.

Fig. 4.



Limerick Bend.
Fig. 5.



THE SALMON ANGLER'S OUTFIT

There remains to be noticed a very important part of the salmon-fisher's equipment, namely, the mechanical aid in landing fish. The trout-fisher is happiest alone, unless he has to fish from a boat; but in salmon-fishing the assistance of a gillie greatly lightens the labour, were it in no other respect than carrying the fish when caught. Moreover, in some rivers the use of a gaff is prohibited during part, or even the whole, of the season. This renders necessary a landing-net or some other appliance too cumbrous for the angler himself to carry or wield.

The cardinal principle in using the landing-net is to get the head of the fish in first. Scooping at the tail end of a salmon is a futile manœuvre and risky withal, for it is in the terrified dash that follows that the hold of the hook is most likely to give way, whereas if the fish's head is enmeshed his final struggle will but serve to keep him in the net.

Besides the net and the gaff, a landing-snare has been devised and is well spoken of by those who have used it in Norway and elsewhere. It consists of a wire noose, held in position by a pair of curved metal arms, passed from behind the salmon over its tail and drawn tight. A friend has reported to me that with this instrument he landed five consecutive fish averaging 30 lb. from the Sundals river, and nobody could ask for better service than that. I have never seen this instrument in use.

In gaffing a fish the hook should be laid quietly over his back nearer the head than the tail, then drawn steadily and firmly home. Never allow your gillie to strike at a fish; if he does so, take the gaff from him, even at the risk of wounding his feelings, and apply it yourself. And never allow him to put the gaff below the fish, except when it has to be taken into a boat out of deep water. In such circumstances it is proper to gaff a salmon from below; but in landing a fish from the bank an upward stroke, if it misses its mark, is pretty sure not to miss the line.

A trustworthy gillie is a mighty comfort, but he has not experienced the full delight of salmon-fishing who has not wandered out alone and killed his fish single-handed. I think I never had, and it is most improbable that I ever shall have again, such exciting pleasure in the space of three hours as fell to my lot on April 20, 1901. We had been fishing the river Minnick, my friend S—— and I, on the 19th; the water was in perfect trim; it was as certain as anything could be that fish must be in the river, for the nets had all been removed during that and the previous season, yet neither of us saw a sign of a fish during the six hours that we were by the waterside. It was a flat calm, with a hot and intensely bright sun in

a cloudless sky. "Norwegian weather," methought; "we must adopt Norwegian hours of angling"; and I proposed to S—— that we should go out next morning before the sun should rise above the brow of Lamarkan. The idea did not commend itself to him, so next morning I left him abed and sallied out before 6 a.m. The conditions were not promising; the ground was white with hoar-frost, and my fingers were so cold I could hardly fasten a Black Ranger to the cast. Nevertheless, I had not made half-a-dozen casts in the Borgan Burnfoot, before the Ranger was fixed in a fish. Eight pounds, a lovely little model, fresh from the tide. Another of like weight and shape came to the gaff among the rocks of Rough Isle, and, thinking that I had well earned some hot coffee and eggs and bacon, I turned towards home. The way led past a rocky pool of most alluring aspect, the very place for a springer to rest, yet I had never fished it nor heard of anybody else doing so, by reason that it was well-nigh inaccessible. A precipice on the near bank left but a very narrow margin between its foot and the river, that margin being thickly clothed with tall alders. Howbeit, I was glad to lay down the bag with the two fish, and to rest awhile, and while I rested the spirit moved me to get a fly over that water somehow. Clambering and slithering down the cliff, I poked the rod out between two alders and, casting being out of the question, allowed the current to take the line down as it was paid out. The stream was rough and rapid, chafing among rocks; nevertheless I caught sight of a dark, angular object showing for a moment in the vicinity of the fly. It was the back fin of a salmon, and I was fast in him. But how to deal with him! I could not raise the rod for the branches overhead: I could but turn it up stream and allow the fish to run about as he pleased. Had he chosen to run up above me, the game was up, for that would make it impossible to keep the line taut. Well, he did not so choose; he disported himself in the most obliging fashion below me, where the stream broadened into the semblance of a pool. In fifteen minutes or so he showed signs of weariness, yet it was evident that I could not land him where I stood. The opposite bank was a waste of rocks; if I were only over there I could end the business pretty soon, but between me and these rocks was a rushing torrent of unknown depth.

Help was out of the reckoning. It was Saturday and here, in the heart of the hills, I might stay under shadow of that cliff till Monday without a soul passing that way, unless it occurred to S—— to send out a search party. At last I decided to risk the crossing. Luckily I had no waders

on, or the risk would have been serious, as I knew nothing about the soundings. The water was intensely cold, but it proved to be only waist-deep; I reached the far side and soon had out the fish, a nice fellow of twelve pounds. Then I had to recross the stream to recover the other two fish, and returned to our farmhouse-lodging a heavy-laden, but well-satisfied, being. Be sure that full justice was done to the breakfast awaiting me. The sun was now high above Lamarkan, and not another fish was killed or moved that day.

Now the moral of this long yarn is not the merit of early-rising (though it illustrates how groundless is the common belief that salmon will not do business until after the normal human breakfast hour), but the expediency of having a handy kind of gaff for solitary excursions. It is not well to extol the goods of certain makers, and I avoid doing so, as it might prove invidious to other makers of equal excellence. But I make an exception in the matter of a particular gaff which I obtained more than forty years ago from the late Mrs Hogg, a dear old lady who presided over a tackle shop in Princes Street, Edinburgh, when the world was (at least many of its present inhabitants were) younger and fresher than they are now. Messrs Farlow, to whom I gave the pattern after Mrs Hogg's death, have taken out a patent for it under the name of the Maxwell gaff; and whereas I can claim no merit for the article, I may confidently pronounce it to be, not only the best design in the market, but the only one thoroughly satisfactory in every respect that I have ever seen.

Dear old Mrs Hogg! I trust that the sometime Mr Hogg was worthy of you, and that, if you are now reunited to him, you are established in the best of quarters. When I was but a lad she, being already a widow, instructed me in the fascinating art of fly-tying. Her verdict at the end of the first lesson was encouraging.

"I think ye'll dae," quoth she. "There's yae thing I like aboot ye, ye've no got sweetie pawms."*

"Oh, that's a good thing, is it?" I observed.

"Deed an' it is!" she replied. "My certie! the feathers and the silk the lads spoils to me wi' their sweetie pawms."

*Perspiring hands.

SALMON FLIES

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

IN the whole range of angling there is no subject upon which such irreconcilable difference of opinion prevails as upon the need for variety in salmon flies and the respective merits of different patterns. Although of late years I have met with an increasing number of anglers whom experience has brought to a similar opinion as myself upon this matter, it is probable that we are still in a minority, and that the majority adhere to belief in the virtue of "changing the fly." The belief, which every successive season's experience has added confirmation in my own mind, is that it does not matter one hayseed what is the colour or material of the object called a salmon fly that one presents to the notice of a salmon, provided that it is not too large to excite suspicion, or too small to escape observation, and that it is given a lifelike motion.

I was not always of that faith—or want of faith: far from it. I was entered to salmon fishing in the belief that colour and material were of primary importance; that it might be fatal to success if a fly with yellow silk body were used instead of one with black wool, as prescribed by the local authority, or vice versa. I used to comply so strictly with the precept of changing a fly that had been missed or refused by a salmon, that I find it recorded in my fishing book how, when fishing a pool close to the sea in the River Luce on October 15, 1870, I raised a fish five times, changed the fly each time, and killed him on the sixth offer. It cannot now be proved, but I entertain no doubt that if I had presented the same fly each time, the result would have been identical.

As experience grew with years, so my faith in the accepted doctrine waned, and I began to find it difficult to reconcile with reason the lists of special flies prescribed for each separate river in the United Kingdom. For instance, in the delightful "Book on Angling," by Francis Francis, hundreds of different patterns are arranged under the heading of the rivers for which they were held appropriate, if not essential; and, in addition, a list of seventeen "general" flies was added which were recommended for use anywhere. Now I suppose there is no fly recognized at the present day as being more suitable for "general" use—in other words, none is more generally used—than "Jock Scott" and the "Wilkinson";

yet in the sixth edition of the "Book on Angling" (1885), neither of these popular flies is recommended for general use; both are there described as special to the Tweed. Yet is "Jock Scott" no native of Tweedside; like Venus, he was born at sea, having been devised and tied by Jock Scott, fisherman to Lord John Scott, on a voyage to Norway in 1845.

"Jock Scott" quickly established its reputation in Scandinavian waters, and afterwards became *sine qua non* on the Tweed, where, only a few years before its invention, brightly coloured flies were held in abhorrence, as witnesseth the following passage from Stoddart's "Angler's Companion" (chapter xi):

> "I am only stating a well known fact when I affirm that, in the time I allude to, the salmon fishers on Tweedside not only held what is called the Irish fly* in absolute ridicule, but actually forbade the use of it on those portions of the river which they individually rented; and this they did, not because they deemed it too deadly for every-day use, but solely because they conceived it acted as a kind of bug-bear to the fish, scaring them from their accustomed haunts and resting places. . . . Was the bygone school of anglers a humbug? Is the modern one less so? . . . Seriously speaking, are the tastes and habits of salmon, as some assert, of a revolving nature? Is the fish, too, so capricious that a single fibre wanting in the lure—a misplaced wing—a wrongly assorted hue—will discompose and annoy it?"

Stoddart goes on to tell of a certain Scottish laird who, like himself, was profoundly sceptical about the merits of variety in flies, never fished with any except those dressed with "snow-white dubbing and hackles, silver twist and portions of the pencilled wing feather taken from the silver pheasant . . . and although competed with by one of the ablest craftsmen in the district, whose notions regarding the visual perceptions of fish were perfectly different . . . managed generally to bear off the palm."

Tom Todd Stoddart must be reckoned a powerful ally in defence of opinion upon any point connected with salmon fishing, for no man ever surrendered himself and sacrificed his material interests more completely to the thrall of that sport. Born in 1810, and admitted in 1833 a member of the Faculty of Advocates in Edinburgh, he spent his whole subsequent life, weather and season permitting, on the banks of rivers

*Irish salmon-flies were made to combine all the hues of the rainbow at a time when none but greys and browns and blacks were displayed in English and Irish waters.

or the bosoms of lochs in every quarter of Scotland; so much so that when, in later years, his former fellow-student, Sheriff Glassford Bell, met him and asked—"What are you doing now, Tom?"—"Doing?" was the reply; "man, I'm an angler!" Be sure that if Tom had detected any superior attraction in one fly rather than another, he would have been the first to turn it to account; but he wrote scornfully of those who were in bondage to that form of superstition.

If one considers the conditions under which a fly is presented to a salmon, one must surely suspend the reasoning faculty before it is possible to entertain a belief in the fish's predilection for one of these simulacra rather than another. The conditions are these:

1. The salmon is not looking out for food in the river. Mr Abel Chapman has stated that truth with convincing energy in his book on "Wild Norway."

> "Salmon ascend favourite streams in shoals; they are by nature rapacious and voracious; what is there in any river to satisfy hundreds of such appetites? If they required to be so satisfied, a single week's ravages would clear out every living thing in the water. Every trout, smolt or eel, every duck, moorhen and water-rat would speedily be swept up; in a week, small boys would hardly be safe."

Therefore, in seizing the fly the salmon takes it for some other purpose than to eat it. It yields to a predacious instinct, just as a terrier will run after, and seize, a ball thrown across the lawn, without any intention of devouring it.

What course would a staid business man take if, when seated at his desk in the City, he perceived an unfamiliar creature careering about the ceiling of his office? Would he not "rise," and either try to catch it himself or ring for one of his clerks to do so? Whichever of them succeeded—master or man—would use his hands, without the faintest intention of making a meal of the visitor. A salmon, having no hands, takes the fly with the only prehensile organ at its disposal—its mouth.

2. Assuming, for argument's sake, not only that salmon possess a nice sense of colour, but that they evince preference for one hue over another, it must be admitted that their normal position at the bottom of a river is the very worst to enable them to exercise discrimination. Every object passing over their heads must appear in dark relief against the bright background of the sky. The glitter of tinsel, the sheen of silk, the opaque brilliancy of kingfisher or macaw feathers, cannot be perceived by the

No. 13. Meg-in-her-braws

No. 15. Poynder

No 16. Jock Scott

No. 5. Red Ranger

No. 1. Gordon

No. 4. Green Highlander

No. 2. Bulldog

[illegible] Sheriff Chamberlain Bell.

[illegible] "— Doing!"

[illegible] Tom had de-

[illegible] another, he would

[illegible] scornfully of those

[illegible] is presented to a

[illegible] before it is pos-

[illegible] for one of these

[illegible] these:

[illegible] river. Mr Abel Chap-

[illegible] in his book on "Wild

[illegible] shoals; they are by nature

[illegible] in any river to satisfy

[illegible] required to be so satisfied, a

[illegible] living thing in the water.

[illegible] and water-rat would

[illegible] would hardly be safe."

[illegible] takes it for some other purpose

[illegible] just as a terrier will

[illegible] the lawn, without any intention

[illegible] man take it, when seated at his

[illegible] unfamiliar creature [illegible] about

[illegible] "rise," and either try to catch

[illegible] to do so? Whichever of them suc-

[illegible] hands, without the faintest in-

[illegible] A salmon, having no hands,

[illegible] at its disposal—its mouth.

[illegible] that salmon possess a nice

[illegible] for one hue over another,

[illegible] position at the bottom of a river

[illegible] discrimination. Every object

[illegible] dark relief against the bright

[illegible] the sheen of silk, the opaque

[illegible] cannot be perceived by the

fish when these materials are presented to it between its eye and a strong light, unless that eye is endowed with powers denied to human organs of vision. The only coloured rays that can reach the retina of the fish are those transmitted through such substances as dyed wool and hackles. Delicacy of hue in an opaque substance like floss silk, which is so largely used in fly-dressing, can have no effect whatever upon the salmon's organ of sight.

3. What we call a salmon-fly is an arbitrary combination of silk, fur, feathers, etc., formed after the image of no real creature, and described as a "fly" because it corresponds in arrangement to a trout-fly, which may be a close imitation of a real insect.

It requires but a slight exercise of imagination to understand whence the remarkable empyrical doctrine about the merits of various salmon-flies has arisen. We do not, indeed, know when or where fly-fishing for salmon was first practised in the British Isles. Izaak Walton, as aforesaid, knew nothing about it; but Izaak's contemporary and rival, Richard Franck, was an accomplished fly-fisher, and a far better naturalist than Izaak, at whom he girds for "stuffing his indigested octavo with other men's notions," and laughs at his statement that pike were bred from pickerel weed. Richard, writing nearly three hundred years ago, was as firmly convinced of the need for humouring the salmon's sense of colour as is the most dogmatic Tweed boatman of the twentieth century.

> "Remember always to carry your dubbing-bag about with you, wherein there ought to be silk of all sorts, threads, thrums, moccado-ends and cruels of all sizes and variety of colours; diversified and stained wool, with dog's and bear's hair, besides twisted fine threads of gold and silver, with feathers from the capon, partridg, peacock, pheasant, mallard, smith, teal, snite, parrot, heronshaw, paraketta, bittern, hobby, phlimingo or Indian flush; but the mockaw, without exception, gives flames of life to the hackle. . . . Should any man, under the pretence of an artist, remain destitute of these prenoted qualifications—proclaim him a blockhead; let him angle for oisters!"*

It is evident from this that considerable refinement had been introduced into the composition of salmon-flies by the middle of the seventeenth century; but in all Richard Franck's entertaining treatise there

*Northern Memoirs, p. 178, edition of 1821.

is no hint that he considers one fly better than any other for different rivers. He would have been sure to say so had it occurred to him, for, having served as one of Cromwell's Ironsides and fished many rivers in England, when the Protectorate was on the wane and the Monarchy about to be restored, he prudently crossed the Border, where he found a more congenial political atmosphere, and travelled north in a leisurely way, catching salmon in every likely river he crossed, from the Dumfriesshire Nith to the Brora of Sutherland and Naver of Caithness, and arguing fiercely upon controversial theology.

By degrees it became generally known that salmon might be taken with larger flies than were in use for trout. Riverside folk, whose wallets were not stored with the varied material employed by Franck, were fain to use what stuff was ready to hand—feathers of poultry and native wild-fowl, dubbing from homespun cloth or an old bit of carpet; whence it came to pass that local patterns of flies established their reputation, differing in trifling details, but agreeing in their prevailing sober hues. Such, no doubt, was the origin of Tweedside " Toppy " and the old brown turkey wing with light coloured tips; both of which, *experto credite*, are just as sure killers at the present time as when their praise was celebrated by William Scrope.

Like many another old fisher, I have lived to see the fashion change on many rivers, where, in my youth, if a man were so daring an innovator as to depart from the routine alternative of grey mallard, brown turkey or grey goose wing, he was dubbed by the local experts " a fule body and an obstinate, wi' his head filled wi' queer whimsies aboot flees." Time has wrought a gentle, but emphatic, revenge; for it is now proved, in the preference shown for the gaudiest patterns by the present generation of experts on these very rivers, that the " queer whimsies " existed only in the heads of those who imagined that success depended upon rigid adherence to established patterns.

Instances could be cited without end to demonstrate the fallacy of attributing superior virtues to one fly over another according to the river in which it is used. One may suffice here, and it is a case peculiarly in point, because it resulted in the genesis of a certain queer fly, which has since won a reputation upon many rivers. Indeed, when I went to fish the Redbridge water on the Test some years ago, so firm was the belief in this fly that the local prophet warned me against throwing away a chance by offering the fish any other.

The hero of this adventure and author of the fly in question was one Michael Maher, fisherman on the Longfield water of the Suir, who started from home one spring morning in 1874, leaving his fly-book behind and taking only the Devon minnow as bait, for he had heard that the water was thick. He found it, on the contrary, very clear and, seeing a very large fish rise near a certain big stone—a grand taking place—he determined to avoid the risk of alarming him with a sunk bait, and to try a fly over him first. But never a fly he had on him—only a big hook or two for loach-fishing—and the day would be far spent before he could return home for his book and get back to the river.

There was a farmhouse at hand, however, and therein a maiden with whom Michael was on terms of friendship. Repairing thither he begged a bit of silk and some feathers with which to tie a fly on the spot.

"For feathers, sure there's lashin's of them," replied the nymph, "for I'm afther plucking a poulthry this very morning; but for silk, Michael, you're afther coming to the wrong shop, for sorra a bit of it is there in the house."

Now the fringe of pretty Phœbe's shawl was of pink worsted, and, in default of silk, she willingly allowed Michael to pull out a few strands of the same. Then she showed him where the spoils of the slaughtered cockerel were lying.

"Musha! but them's poor stuff," quoth Michael. "Wasn't there an iligant yulla feather in the hat ye wore at the chapel on Sunday? And yulla's the colour to fetch a salmon with the could weather we do be having."

Phœbe was too good-natured to refuse the appeal; a pinch of yellow-dyed swan fibres would never be missed from the ample splendour of the Sunday hat. In half-an-hour Michael had rigged up such a fly as had never been displayed on the Suir or any other water—a pink worsted body, a yellow swan wing and a hackle from the deceased "poulthry" wound under the same; and off he hurried to the river again. The big fish seized the strange fly at the first offer, and within half-an-hour Michael was on his way back to Cashel, carrying his noble quarry with him. It constituted a record in weight for rod-fishing on the Suir, famous as that river is for big fish, for it weighed just 57 lb. Of course the first question asked by everybody who came to view the great fish was—"What fly did you get him with, Michael?" and to every one the answer was the same—"Ah, that's a mysthery."

When at last the secret did come out, "the Mystery," with suitable refinement of material and garnishing, was received with enthusiasm on many a river side, and was found to do quite as well as any other fly —*and no better.*

Viewed in the cold light of reason, such an incident as this ought surely to enable one to declare that it matters not one spin of a farthing whether the prevailing hue of a fly be red or blue, yellow or black, or an equal combination of many hues; and the only important consideration is that the lure be of suitable size and be given life-like motion. Well, that is the conclusion to which I have been driven, *malgré moi;* but such is the weakness of the human intelligence that I have found it beyond my strength to act upon it. There is such a mute fascination in daintily dressed salmon-flies, their outline is so graceful, their tints so delicately blended or so cunningly contrasted, that no nature sensible of beauty can contemplate them with indifference. Consequently, I suppose I spend as much time as anybody else at the outset of a day's fishing in hesitating between the modest lustre of a "Silver Grey," the sombre dignity of a "Black Dog," and the freakish gaiety of a "Popham," deaf the while to the monition of intelligence that the result must be exactly the same whichever is chosen. Truly it hath been said that salmon-flies are designed rather for the delectation of fishers than for the deception of fishes.

That being so, no treatise on salmon fishing would be received with favour that did not contain a description of a few, at least, out of the bewildering variety of patterns from which the angler has to make his choice. Yet in doing so I shall endeavour to support the doctrine of indifference by giving the figures of a few flies most in favour in the middle of last century, to compare with those that bear the highest reputation as killers in the present day.

Probably few people would care to be identified with the doctrine that salmon have changed their taste during the last hundred years. No animal is of more conservative habits than salmon; with few exceptions they return each to the river in which it first saw light; arriving there, they take up the identical resting places that have satisfied creatures of their race from immemorial time; and there they perform the self-same aerial antics which had earned for it, before Pliny's day, the appropriate title of *salmo,* the leaper, *a saliendo.* Nothing is more improbable than that a predacious fish should acquire a predilection for

certain colours and combinations which had no attraction for former generations of his kind. Such a proposition has only to be expressed in words to manifest its absurdity. What, then, is the source of the total change in the fashion of salmon-flies during the last half-century? Why does the modern Tweed fisherman turn with indifference from "Meg-in-her-braws" which, when Scrope wrote in the early 'forties, was considered gaudy as compared with other Tweed flies, and prescribe such brilliant confections as the "Durham Ranger" and the "Wilkinson"? It arises solely from a notion that what tickles the human fancy must be attractive to that of a salmon. Being a perfectly harmless illusion, unless it is indulged to such an extent as to interfere with the fisher keeping *some* fly constantly in the water, he must needs be a philosopher of a very austere school that would condemn or discourage it. Salmon-flies are very pretty things, of which a moderate variety will contribute not a little to the angler's enjoyment. Accordingly in Plates VIII and IX are shown a few typical patterns. It may serve to explain, if not to justify, the impartiality with which I regard any one of these patterns, and the perfect indifference which I should feel as to which of them I should choose to exhibit on any river where salmon were to be caught, if I give the following illustration. As a young fellow, I used to fish a good deal in the North Tyne from Reedsmouth down to Countess Park. Not having been there since the year 1874, I lately asked a friend who is in the habit of fishing it, what flies were in vogue on that water now. "Well," said he, "I don't think it matters what fly one uses, so long as it is not a 'Blue Doctor.' I never can do any good at all with that." I turned up my old fishing journal and showed him where a "Blue Doctor," tied by a railway porter at Reedsmouth Station, was preserved, with the record that it had landed six salmon in the Reedsmouth water.

But if colour and material are of little moment in a salmon-fly, great is the importance of size. The fly must be large enough to attract the notice of the salmon, and not large enough to scare him. In judging of this, season, temperature and height of water must be the governing factors; and how great is the range of scale may be seen in Plate IX, wherein are represented the largest and the smallest flies which I have known to kill salmon. With the large one (No. 6) I killed a spring salmon of 15 lb. in Deeble Pool on Helmsdale, February 14, 1899; with the small one (No. 7), a "Professor," Sir Hugh Shaw Stewart killed two salmon, 7 lb. and 6 lb., in the Cree in July, 1905.

He who aspires to "busk his ain flees," which is good Scots for "tie his own flies," will never learn the trick by reading written instructions; whereas three or four lessons from an expert will suffice to ground him in the principles, by practising which he will soon attain proficiency. I shall not attempt more, therefore, than to indicate the general structure of a salmon-fly, naming the different parts of which it is usually composed, so that the reader may follow the recipes given for constructing a few representative patterns. The patterns themselves are innumerable; has not Mr Hardy, of Alnwick, been at the pains to give a list of 345 different salmon-flies in his book on "Salmon Fishing"? Many of them are slightly varied according to the fancy of different dressers; but anglers are far more apt to encumber themselves with too many patterns than to find themselves at a loss from having too few. In Figure 6 are shown the different parts of a salmon-fly, whereby the beginner may follow the directions for dressing the following dozen patterns. When he has accomplished that, he may give rein to his fancy and indulge in any amount of variety.

1. "The Gordon." *Tag*, silver wire and lemon floss; *tail*, golden pheasant topping with fibres of tippet; *butt*, bronze chenille; *body*, one-third golden floss, remainder crimson floss, ribbed with broad silver tinsel and silver twist; crimson hackle over crimson floss, sky-blue hackle at shoulder; *wing*, two short tippet feathers, two crimson cock's hackles, a few fibres of crimson, blue and yellow-dyed swan, bustard and peacock herl, jungle-fowl at cheek, topping over all.

In tying this or any other salmon-fly, tackle-makers often make the mistake of putting too much feather in the wing. It is far better to fish with a fly rather bare and thin than with one overdressed. "The Gordon" originally came from Deeside; but if I were limited to the use of one pattern in any river, this is the one I should choose, for it is the only fly for which, when harling in the Tay with three rods astern, each with a different fly, I have fancied that salmon show a preference. It is an excellent fly on any size of hook and in all fishable conditions of water or weather.

2. "The Bulldog." *Tag*, gold tinsel and ruby floss; *tail*, a topping and blue chatterer feather; *butt*, black chenille; *body*, lower half, flat silver twist with red Indian crow feathers tied in above it in "Jock Scott" fashion, with a turn of black chenille over the tying; upper half, French blue floss with flat silver twist and blue hackle

over; pintail or teal hackle at shoulder; *wing*, strips of yellow and black-dyed swan, pintail or farmyard drake over and two jungle-fowl hackles, blue chatterer at cheek; topping over all.

A native of the Cumberland Eden, named, it may be imagined, from its faculty of taking hold and keeping it. I give the "Bulldog" a place in this select gallery (where there is no room for "Jock Scott" and other far-famed killers), because it was with this fly that I killed my first salmon in Norway. Arriving at the lodge at 5 p.m. on Saturday night, there was only an hour to run before the Norwegian Sunday begins, on which day angling is suspended, and rightly so. My hostess had just returned from fishing the pool close to the house, where she had failed to move anything. "Will you have a cup of tea," she asked, "or would you like to have a cast before Sunday begins?" No need to quote my reply; in feverish haste I put my gear together; a large "Bulldog" happened to be the fly that came first to hand, and down I scuttled to the pool which had yielded nothing to three hours' flogging. It is a wide, streamy pool; to reach the lie of the fish a boat is necessary, so I embarked at once and had not made many casts before I fancied I saw a fin show above the broken water near the fly. I could not be sure; but all doubt was set at rest at the next cast, for I was fast in a fish. The behaviour of that salmon was a bit of a revelation to me, for there is no manner of doubt that these northern fish, aided by a swift and powerful water, fight harder and run more strongly than those in our small rivers at home. He left the pool, and it was well into Sunday before I was able to extract the "Bulldog" from his massive maw—a clean-run fish of 21 lb.

3. "The Black Dog" (Tay pattern). *Tag*, silver twist and golden floss; *tail*, topping and sprigs of scarlet ibis; *butt*, black chenille; body, black floss, ribbed with ruby floss between broad silver tinsel on one side and gold twist on the other; black cock's hackle over the whole length of the body, at the shoulder a long-fibred black heron's hackle, with a guinea-fowl over; *wing*, strips of dark brown turkey, red and yellow dyed swan, claret cock's hackle, purple peacock's herl; a slice of wood-duck and a jungle-fowl hackle on each shoulder. Large topping over all.

There are many variations in the dressings of this fly, yellow floss being substituted sometimes for ruby in the body, but the general effect should be sombre. It is used in large sizes, and I have particular cause to fancy it for a flooded river in spring. For instance, in February, 1911,

I was staying with two friends at that excellent hostelry the Gordon Arms, Fochabers, waiting for a five-foot spate to subside, and waiting in vain from Monday till midday on Saturday. Then, although the water still stood at 46 on the "pinny," and was a bad colour besides, we decided to wet our lines after luncheon, though with a very faint hope of doing so to any purpose. My lot was cast for beloved Alltdearg, but that grand pool was a tossing sea, so I went beyond to the Otter's Cave, a cast which nowadays is of no use except in a very high water. Certainly it bore no semblance to a salmon pool; it was a broad swift race of "drumly" water, and I flung the "Black Dog" upon its expanse with no expectation of raising a fish. It was now half-past two; at 5 o'clock it was dark; yet in that brief space of time I had the extraordinary luck to land four clean salmon weighing 25, 9, 7 and 7 lb. respectively. As usual, under similar conditions of flood, these fish were all lying very near the bank. It was not the first lesson I had learnt about the merit of setting adverse circumstances at defiance, but it was the most surprising, because muddy water is believed, and generally proves, to be prohibitive to fly-fishing.

4. "The Green Highlander." *Tag*, silver wire and gold floss; *tail*, a topping and sprigs of teal; *butt*, black chenille; *body*, one-fourth yellow pig's wool, remainder myrtle green pig's wool with green hackle over, ribbed with silver tinsel; shoulder hackle blue-dyed gallina; *wing*, strips of mottled brown turkey, bustard, red, yellow and blue-dyed swan, jungle-fowl at cheeks, topping over, blue macaw wings.

This is a prime favourite on the Brora; indeed, on the only day when I have fished that wonderful little river, my gillie would not allow me to exhibit any other fly. I killed eight fish on it, fighting against one of the heaviest gales it has ever been my lot to encounter in the month of April.

5. "The Red Ranger." *Tag*, silver wire and sky-blue or yellow floss; *tail*, a topping with sprigs of ibis and teal; *butt*, black chenille; *body*, scarlet mohair, ribbed with broad silver tinsel and silver twist; sky-blue hackle at shoulder; *wing*, two long jungle-fowls, doubled tippet feathers over them, blue chatterer cheeks, topping over all, blue macaw horns.

This fly is a variant of the better-known "Durham Ranger," which, I have read somewhere, had its origin in two gentlemen from Durham going into a tackle-maker's shop on Tweedside (whether Forrest of Kelso or Wright of Sprouston I quite forget), and demanding a fly that would

No. 11. Lady Caroline

No. 14. Dusty Miller

No. 6. Wormald

No. 7. Professor

American Pattern

No. 9. Argus

No. 3. Black Dog

No. 12. Dun Turkey

[illegible] and waiting [illegible] although the water [illegible] besides, we decided [illegible] hope of doing so [illegible], but that grand [illegible] a cast which [illegible] Certainly it bore no [illegible] "drumly" water, [illegible] expectation of raising [illegible] it was dark; yet in that [illegible] land tour clean salmon [illegible] under similar condi- [illegible] the bank. It was not the [illegible] adverse circumstances [illegible] because muddy water is [illegible] to fly-fishing.

[illegible] wire and gold floss; [illegible] black chenille; *body*, one- [illegible] green pig's wool with [illegible] tinsel; shoulder hackle blue- [illegible] brown turkey, bustard, red, [illegible] topping over, blue

[illegible] the only day when [illegible] would not allow me to [illegible] fighting against one of the [illegible] in the month of April. [illegible] wire and sky-blue or yellow [illegible] of ibis and teal; *butt*, black chenille; [illegible] with broad silver tinsel and silver [illegible] shoulder; *wing*, two long jungle-fowls, [illegible], blue chatterer cheeks, topping over

[illegible] known "Durham Ranger," which, [illegible] in two gentlemen from Durham [illegible] (whether Forrest of Kelso [illegible] and demanding a fly that would

be sure to kill. The artist undertook to do so, and next morning handed him a brand-new pattern, which proved so successful in the hands of these fishers that it was dubbed the "Durham Ranger," and has long held a place in the standard list. I cannot say that it is a favourite with me, though I have killed several fish with it in spring, especially with the variety "Black Ranger," which has a jet black body. The characteristic Ranger wing sits too stiffly to please my fancy; but I have honoured the "Red Ranger" with a portrait, because it is reputed to be the surest killer on the Sundal Elv, a fine river that flows into the fjord upon which Christiansund is situated. The late Lord Leicester used to fish the Sundal many years ago, and is commemorated in the name given to a certain cast thereon. He lost his pipe there one day: nothing strange in that, for the whole pass is filled at that place with a wild jumble of enormous boulders fallen from the mountain above. What *was* remarkable was that he found the said pipe some days later, whence the cast has been called Piba Pool ever since.

Something similar that happened to myself on this river seems to show that the nymph of Sundal is indulgent to careless folk. One evening about 10 o'clock I hooked a fish (on a "Red Ranger," of course) in Lethen. It set off down stream at a great pace, clean out of the pool, so that I had to leave the boat and race after it. It so happened that I had landed on an island, where I managed to kill my fish, 25½ lb. It was now getting as near dark as it can get in a Norwegian June, so I made tracks for home, carelessly leaving a favourite knife on the shingle. During the night, the river rose considerably, so that when I returned to look for my property next day, the island was nearly all under water. Two or three days later, the river having subsided, I recovered the knife, none the worse for its immersion.

Fishing the Sundal Elv has impressed itself on my memory owing to the daring of its boatmen. Every river in Norway, at least every one that I have fished, has its peculiar build of boat. I came to Sundal straight from fishing the Rauma. Now in Romsdal the boats are built on very pretty lines, the prow saucily cocked and the sides gracefully moulded. The boatmen are very careful, taking no risks in rapids, nor hanging in perilous proximity over a roaring foss. One may fish a whole season in the Rauma and never once have his heart in his mouth or ship a pint of water. Very different are both boats and boatmen on the Sundal. The boats are like crazy packing cases with the lid gone; any lines they possess suggest

a Thames punt cut across the middle; yet in these frail craft you are navigated among boulders, to touch one of which would mean a capsize into a foaming torrent, and down rapids with the waves leaping high above the gunwale. And this without rowlocks: only a frail withy looping each oar to a single wooden pin. Verily it makes one catch his breath to gaze upon the rapid below the Storr pool and reflect that, during my visit, Mr Biert was taken through it by a fish, and was still afloat when he reached the smooth water. The fish weighed 37½ lb.

Ah! those days of yore in Norway, what bright gleams they reflect from the past, and how hard it is to put a check upon yarning about them. The people are so charming—like Lowland Scots *plus* good manners—and so rigidly honest withal that one is absolved from the obligation to check bills rendered; just as well, perhaps, else there might be some difficulty in identifying familiar articles of male attire in a week's account for washing described as follows on a scrap of paper two inches square:

4 pr stroinper	28
2 Manskjetsjorter	56
1 Uldsjorte	20
1 Bükse	20
3 Snipper	21
3 Slips	21
10 Lomtorkleder	70
	Kr 2.36

It is a silly thing to make fun at a foreign language; but it is permissible to smile when foreigners make use of our speech to advertise the attractions of their country. I may give Herr Didrik Maan a gratuitous advertisement by reprinting his announcement from a Norwegian paper:

LOOK HER! SALMON!

The honourable travellers are averted to, that undersigned, who lives in Fjorde pr. Volden Romsdals county, Norway, short or long time, hires out a good Salmonriver. Good lodging finds.

Didrik Maan
shopkeeper.

6. "The Blue, Black and Silver Doctors." *Tag*, silver wire and yellow floss; *tail*, a topping and Indian crow; *butt*, scarlet wool worsted; *body*, sky-blue floss, ribbed with silver twist and a sky-blue hackle; *wing*, gold pheasant tail feather, grey turkey, pintail, with fibres of yellow and red swan, topping over all; *head*, scarlet worsted.

The "Black" and "Silver Doctors" are similar in all respects, save that the first has a black floss body and black hackle, and the body of the second is of silver tinsel, with no hackle, save a sky-blue one at the shoulder.

7. "The Wilkinson" resembles the "Silver Doctor" in all respects save that it has no hackle over the body, no red worsted on its head, but it is indemnified for the loss of these by a flaming magenta shoulder hackle and a pair of blue chatterers on the cheeks.

No fly, except "Jock Scott," has acquired such a reputation on Tweedside as the "Wilkinson," and indeed it kills quite as well as any other, there or elsewhere; but I got so tired of hearing it extolled at the expense of equally meritorious compositions, that I devised one to compete with it, which was afterwards called by my name.

8. "The Sir Herbert." *Tag*, gold tinsel; *tail*, a topping and sprigs of ibis; no butt; *body*, gold tinsel carried on from the tag for two-thirds of the length; gold twist over and a yellow-dyed cock's hackle with a black list down the centre; remaining third scarlet mohair with magenta shoulder hackle; *wing*, two tippet feathers, strips of bustard, white and scarlet swan and wood-duck, and a few fibres of emerald peacock herl. Blue chatterer cheeks and red macaw horns; *head*, bronze chenille.

The Tweed boatman's face to whom I showed this fly was a study in physiognomy. Amusement and disdain flitted across it, changing to contempt and emphatic remonstrance when, on an October morning, I proceeded to attach it to the line. In the evening, having landed seven salmon weighing 122 lb. in the Haly Weil at Bemersyde with the strange fly,* when I ventured to observe that the gold body had not done so badly, all my friend could find to say was, dryly—"Maybe ye'd have done better wi' a Wulkisson." Which was a surmise incapable of disproof. As for the fly itself, it has proved itself just as effective as any other in British and Norwegian waters; but the yellow body hackle merely serves to add

*On November 2, 1892. The weights were 22, 22, 20, 18, 16, 16, 8 lb.

brilliancy to the fly-book, for it invariably gets cut by the first fish that takes it. In large spring sizes a couple of jungle-fowl feathers, shorter than the tippets, improve the wing.

9. "The Argus." *Tag*, silver wire; *tail*, sprigs of mottled argus pheasant; *butt*, scarlet chenille; *body*, black floss, ribbed with silver twist and black cock's hackle; gallina at shoulder; *wing*, two slices of grey turkey, over which two slices of the mottled buff and black feather of the argus pheasant. A turn of fluffy white argus tied hackle-wise over the wing. Black varnished head.

This is a most serviceable fly in all sizes, being composed of very durable material. I have found it very attractive to salmon both in Norway and Scotland.

10. "The Snow Fly." *Tag*, silver wire and yellow floss; *tail*, a topping and a couple of Indian crows; *body*, in three joints, all of flat silver twist; at the top of the first joint is wound a crimson hackle, at the top of the second a sky-blue one, and at the shoulder a gallina or guinea-fowl hackle; *wing*, mixed slices of grey turkey, gold pheasant tail, fibres of red and blue swan, shortish jungle-fowl on cheeks, and a topping over all.

There are many varieties of "Snow Fly"—that of the Beauly has a wing entirely composed of bronze peacock herl and an orange ruff. I have chosen to describe this one, because I happened to have it on my line during the best day's spring fishing that ever fell to my lot, when it accounted for ten out of eleven clean fish in the bag.*

11. "The Lady Caroline." No tag or tail; *body*, a mixture of crimson and blue wool, giving the effect of purple, the fibres not pulled out, ribbed with narrow silver and gold tinsel, a long-fibred red heron's hackle from tail to head, wound the reverse way to the tinsel, and a teal hackle at throat; *wing*, brown mallard.

Evidently a very ancient type, such as Richard Franck may have seen when he perambulated the Highlands in the later days of the Protectorate, "The Lady Caroline," though named after a lady still with us, is one of a large variety of flies peculiar to Strathspey, where the local fishermen adhere conservatively to the patterns in vogue long before such frivolities as jungle-fowl, gold pheasant and dyed plumes came into vogue. It is a very good fly in any river, especially for clear water.

12. "The Dun Turkey." *Tag*, yellow floss and silver wire; *tail*,

*See page 71, *infra*.

a topping and Indian crow; *butt*, bronze chenille; *body*, yellow, orange, claret and black mohair in equal parts, picked out and ribbed with flat gold twist; a claret hackle over the claret and black wool; sky-blue hackle at shoulder; *wing*, two slips of dun turkey with light tips.

This is another venerable pattern handed down from generation to generation, and reputed indispensable in my youth. Substitute brown mallard for dun turkey in the wing and vary the body by composing it of all black or all brown mohair, with hackle of a corresponding shade over it, and you have a series of flies without which success was formerly deemed unattainable in the rivers of Galloway. So, at least, the local experts averred, although at the present day Galloway salmon are found to rise as readily to the gaudiest flies.

13. "Meg-in-her-Braws." *Tail*, yellow wool; *body*, three turns of crimson wool, the same of green wool, remainder brown wool mixed with bullock's hair, ribbed with gold twist with a cock-y-bondhu hackle, blue jay at shoulder; *wing*, two slices of bittern's wing; *head*, yellow wool.

This is one of Scrope's patterns, and I give it because of its archæological interest, to show what was considered a gay fly on Tweedside eighty years ago. Also it is interesting ornithologically, for Scrope would not have recommended the feather of a bittern unless that fine bird, now of rarest occurrence, had not been pretty easy to obtain. The dresser of the specimen shown in Plate VIII has been compelled to substitute the rich mottled feather on a peacock's back, nor is it likely that any salmon will refuse this fly on account of the change.

14. "The Dusty Miller." *Tag*, silver wire and olive floss; *tail*, a topping and Indian crow; *butt*, black chenille; *body*, two-thirds embossed silver tinsel, one-third gold floss, ribbed with flat silver twist, orange-dyed hackle over the floss and gallina at shoulder; *wing*, two slices of black turkey with white tip, fibres of bustard, argus pheasant and red, yellow and blue-dyed swan over; two jungle-fowl feathers half the length of the wing, and two toppings tied in over all with the curve of the feather directed outward and upward, instead of being set as usual to curve downwards.

The "Dusty Miller" has undergone a change of raiment since I made his acquaintance. The gold floss and orange hackle on the body are a modern innovation, and alter the grey, "dusty" appearance he used

to present. However, he remains as good a killer as of old, and is reckoned specially so on the Tay when water and weather have warmed with advancing spring. Dressers are apt in this, as in many other flies, to put too many feathers in the wing. Should it be desired to lighten it before use, do not pull out the superfluous feathers, which is apt to loosen the whole tying, but snip them off neatly with curved scissors.

15. "The Poynder." *Tag*, silver twist and sky-blue floss; *tail*, a topping and blue chatterer; *body*, one-fourth each of gold floss, orange, sky-blue and claret mohair picked out, ribbed with flat silver twist and a claret hackle over the mohair; gallina hackle at shoulder; *wing*, a couple of short tippets, over which a mixture of gold pheasant's tail, bright bustard, red, yellow and blue-dyed swan and slips of wood-duck; jungle-fowl at cheeks and the inevitable topping over all; blue macaw horns.

A good old fly the "Poynder," which was considered a very gaudy affair when it was first promulgated, but has long been eclipsed in brilliancy by others which are more expensive, but no whit more effective.

16. "Jock Scott." *Tag*, silver wire and golden floss; *tail*, a topping and Indian crow; *body*, lower half golden floss ribbed with flat silver twist, over which are tied in some of the rich yellow or orange feathers from the throat of the toucan. Over the butts of these is laid a turn of black chenille. The rest of the body is black floss, ribbed with flat silver twist or tinsel, with a black cock's hackle beside it; gallina at shoulder. In forming the wing one is very apt to make it too heavy, owing to the absurd variety of feathers prescribed. These are, first, two slices of bronze turkey with clear white tips; then fibres of bustard, pintail, mallard, scarlet, blue and yellow-dyed swan and green peacock herl. Jungle-cock on each side, half the length of the wing, blue chatterer at cheeks and topping over all; *head*, black chenille.

I should have incurred the penalties attached to heresy had I omitted Jock from any list of salmon-flies, however severely limited, so I have put him in in order to avoid giving offence to his many devotees. For my own part, I usually fish with anything rather than "Jock Scott," not from prejudice, for I have slain many salmon with him; but because, if salmon have any discrimination in the matter of flies (which I doubt), it is surely better to present to their notice something with which they are not so familiar. When I do fish with this fly I generally have to clip out some of the wing feathers, for it is nearly always too heavily dressed.

"Jock Scott" has had a numerous offspring—"Red Jock," "Blue Jock," "Silver Jock"—besides giving the cue to such flies as the "Bulldog," the "Baron," etc.

Before leaving the subject of salmon-flies, I will venture to quote, in defence of my scepticism about the importance of colour and material, some extracts from a letter I published in the "Field" newspaper on June 19, 1897, describing certain experiments upon the colour-sense of fish:

> "A few years ago, while commenting in a magazine article on the extravagant importance attached by many salmon-fishers to the exact colours displayed in artificial flies, I ventured to express some doubt whether fish in general, and salmon in particular, were able to distinguish difference in the colour of objects presented to their view, especially when these objects came between their lidless, browless eyes and the light. While admitting, what no one can doubt, the intense keenness of their vision and the readiness with which they can distinguish variations in tone from light to dark, I suggested that it was wholly an assumption that fish have the faculty of distinguishing one colour from another of a corresponding shade—say red from green or blue from brown. . . . [After discussing the futility of *a priori* theories about the preference felt by salmon for certain colours in certain rivers, I made the following proposition:]
>
> "Let some floating mayflies be dyed of a bright scarlet (they will reflect about the same amount of light as the ordinary yellowish-grey imitations) and let some devoted searcher for truth use one in a southern stream what time the mayfly is on, and the big trout are sucking down the floating insects by scores. If it were found that the highly educated, nervous trout of an English chalk-stream showed themselves as ready to accept scarlet, pink, sky-blue or yellow imitations as the ordinary grey or green drakes, one might surely argue thence that fish have no discriminating sense of colour, and the whole theory and practice of fly-fishing would be subverted. . . .
>
> "During the present season (1897) I have been fishing in Hertfordshire. . . . I had some mayflies dressed (entirely) with scarlet, and others with bright blue, both being shaded on the darker parts of bodies and wings. There was some difficulty in getting the dressers to understand that it was important that the *shade* of these flies should not be uniform; that there should be dark patches at the head and

shoulders and dark markings on the wings; in short, that a red mayfly, when photographed, should appear exactly like a grey one. At last, however, a satisfactory result was obtained.

"On June 3, after the mayfly had been on about a fortnight, I went to fish the Gade at Cassiobury. . . . I found the mayfly abundant, and the trout, which are exceedingly numerous,* taking them freely. I had no desire that the keeper should suspect me at once of being a lunatic, so I mounted a fly of the ordinary pattern, with which I landed a brace of trout. Then I broached the subject of the dangerous flies, and told my guide that I wished to try some experiments. There was a good, light-coloured trout lying above the bridge in the park in a convenient position. He was near the surface, though I did not see him actually take the natural fly. With considerable trepidation I attached a scarlet mayfly to my cast and offered it to the fish. The sun was shining brightly, and the lure made a hideous display on the water, like a floating fuchsia blossom, and I confess I was surprised when the trout, instead of darting away at its approach, rose, quietly sucked it in, and was landed.

"So much for a first experiment; but I was not quite satisfied, because I had not observed this trout taking the natural mayfly; so I went down to a bend in the river where three trout were rising. The first of these took the red mayfly greedily and weighed 1½ lb. I changed to a bright blue mayfly, to which the second trout succumbed, and so did the third, each of them weighing 1¼ lb. Several others followed on the blue, as well as a brace of chub, till, at a place peculiarly favourable for watching the movements of fish, I mounted the red again. It was the hottest time of day, and at first I thought the trout had found me out. One fish came up two or three times, and turned from the red fly; I took it off and tried him with a grey one, which he took. This certainly looked as if the trout perceived a difference between cherry colour and ash colour; but a little later almost the converse happened. A trout came up, inspected and refused the grey fly, and afterwards took a blue one. The prettiest fish in the bag, a lovely two-pounder, fell to the blue fly after swallowing several of the natural.

"To make a long story as short as is consistent with precision, I

*I am informed that this is no longer the case, and that there is woful diminution in the stock of trout owing to pike having been allowed to increase and the channel to silt up with mud.

landed during that afternoon thirty-one trout, of which only one weighed less than a pound. Four or five were hooked on the grey fly, all the rest on reds and blues. My limit being four brace, I exceeded it accidentally by one, and kept nine trout weighing 13½ lb. I might have landed many more had I worked harder and continued longer. . . .

"Two days later, on Saturday, June 5, I enjoyed an even better opportunity of testing the abnormally coloured flies, in the presence of three independent witnesses. This was on the Beane, near Hertford, where fish are not nearly so plentiful as in the Gade, and far more wary. The day was intensely hot and bright. Unluckily I had used up, or given away, all my cherry-coloured mayflies,* and I had only one very bright blue one left. The fish began to rise about 2.30 p.m., and I had landed two brace, weighing 7½ lb., with the ordinary mayfly before 4.30. I mention particulars of size in order to show that these trout had arrived at years of discretion. I tried a good fish with the grey fly, which he refused. I then went up to a friend's house for a cup of tea. Returning at 5.30, I found this fish still rising, and mounted my solitary blue fly, though I considered it too large for the intensely bright sunshine. He took it immediately, and was landed—2¼ lb. Not far from the same place another fish had taken up his position; on being offered the blue fly he seized it the first time over—2½ lb. Three persons—Mr Abel Smith, M.P., the Hon. Mrs Smith and Mr Anstruther—saw the fly taken out of the mouths of these fish, and I warned them that I might have to subpœna them as witnesses.

"The next act in the drama did not end so propitiously. . . . A large fish was rising in a pool at the foot of an alder. I got the blue fly nicely over him, and he took the first opportunity of hooking himself. Throwing himself out of the water, he showed well over 3 lb.; but, dashing suddenly into a dense bed of weeds, he struggled so violently that, in spite of all care, he smashed the gut and carried off the last of my heretical flies. I stopped after landing two other fish—3 and 1½ lb.—on a grey fly, making a total of eight trout weighing 16¾ lb., besides a few others returned under size. . . .

"Now I am as far as possible from desiring to bolster up an *a priori* theory about the colour-blindness of fish. . . . It may be asked, Why was the experiment tried only in the mayfly season, when

*They had become known as "Bloody Marys."

trout lose their senses? To this I reply that my original statement had no special reference to trout, but it had special reference to salmon. But whereas salmon are vagrant, uncertain creatures, here to-day and gone to-morrow, it is impossible to experiment upon them with the precision which can be applied to trout in a clear English stream, where every movement can be watched. . . .

"Next it may be asked, What is the general impression left on my mind by these experiments so far as they have gone? What light have they thrown on the problem of the perception of colour by fish? The fair inference seems to be this alternative—either fish do not perceive the difference between the coloured rays reflected from, or transmitted through, objects; or, if they perceive it, they disregard it. . . . If this conclusion be just with respect to trout—the wariest fish that swims—what important bearing it has on the whole theory and practice of salmon-fishing with fly! What a vast degree of ingenuity is exhausted in devising attractive patterns of salmon-flies! and what a lot of perplexity and hesitation the angler undergoes at times when salmon are not in a taking mood! . . . A trout gazes earnestly and critically at what is shown to it;* if the most unnatural and brilliant colours do not deter him from attack, how much less likely it is that a salmon should refuse a lure because it does not correspond precisely in hue with some imaginary creature which it is supposed to represent.

"Some salmon-flies doubtless are more conspicuous in the water than others. Those with strong contrasts of shade, such as "Jock Scott," "White Wing," or "Durham Ranger," may be more easily detected, even by a colour-blind creature, than those of a uniform tone like the "Blue Doctor" or the "Kelly." . . . I have long thought it possible, and begin to believe it probable, that, even supposing a fish is placed in the best possible position for detecting variety of colour in a fly, instead of in the worst, as he must be in nine cases out of ten, all the impression he receives is the *chiaro-oscuro* of a vivid photograph."

Since the report whence these extracts have been made was published, I have been the subject of a good deal of severe criticism, and even of

*This applies only to trout taking a floating fly in a gently-flowing, clear stream. The behaviour of the same trout seizing a sunk fly is very different, being a dash and a plunge. But the sunk fly moves as no natural fly can do; the trout pursues it as he would a swiftly-swimming water insect.

some ridicule, on account of so heretical a doctrine. It is with some satisfaction, therefore, that I have received, while these pages are going through the press, corroboration of my waterside observations from the results of physiological research. Professor C. Hess, of Würzburg, has communicated to "Medicinische Klinik" (November 15, 1912) the result of a long series of experiments which he has devoted to testing the colour sense in different classes and orders of animals. This is no place to follow his process of experiment in detail; briefly, the conclusion to which he has come is (1) that mammals perceive light and colour in the same degree as man does; that part of the spectrum whereof the normal human eye is sensitive being visible to beasts. (2) Birds in general and reptiles he has found only sensitive to the colours towards the red end of the spectrum; blue and violet they cannot distinguish. (3) Fishes, according to Professor Hess, are quite insensible to difference of colour, perceiving objects "in exactly the same manner as a totally colour-blind man"; that is, variety of colour affect their optic nerves as different values of light intensity. Professor Hess, therefore, has arrived by a different and surer road at the first of the alternative hypotheses which I, greatly daring, ventured to submit to anglers, viz., that fish are either colour-blind, or, possessing the colour-sense, are indifferent to it as a guide in feeding.*

Though I adhere to my incredulity about the importance of any particular variety of fly to be presented to the notice of a salmon, I have by no means overlooked the result of Dr Francis Ward's ingenious and interesting observations from his subaqueous chamber as described in the "Field" of May 4, 1912. His paper is illustrated with a number of photographs showing different salmon-flies from the salmon's point of view —or nearly so, and he discusses learnedly the phenomena of refraction, reflection and other agencies affecting subaqueous objects. Really, if a man were to carry all these points in his head when he went a-fishing, he never would get to work at all. Luckily for us all, Dr Ward has asked a bed-rock question, and answered it in a way that enables us to dismiss the result of his experiment as irrelevant to success, though not to science. "What," asks Dr Ward, "is the appearance of a salmon-fly while it is being fished?" The answer he makes is founded upon what he saw when Mr Sheringham worked a series of salmon-flies over him who was ensconced in his subaqueous chamber with plate-glass sides, and that answer is—"Never the same for two seconds."

*A summary of Professor Hess's experiments and conclusions was given in *The Field* for February 12, 1913.

Some idea may be gained of the perplexity in which one would be involved who determined to angle in strict conformity with the lesson Dr Ward derived from his experiment, by studying a paper contributed by Mr Sheringham to the same number of the "Field," in which he states the conclusions to which he has been led by taking part in these experiments. His paper is headed "Some Practical Considerations," a title wherein possibly lurks a vein of sly humour. However, my readers shall judge for themselves from the following paragraphs:

> "Dr Ward has shown very clearly how much the appearance of a fly under water depends on its position with relation to both the fish and the sun, or, at any rate, the point in the sky where the sun should be visible. Even on a grey day the light rays from that point are, I presume, the strongest. If the fly is between the sun and the fish during the whole of its course, I am satisfied from what I have seen that the wing is of little or no importance so far as lustre and colour go; it can be no more than a shape to the fish. The part of the fly which in that position has definite value is the hackle, with the body, if it is of translucent material, since it admits the light through it and is full of iridescence.* A heavy, opaque wing, so far from being useful, might prove a disadvantage, since it would prevent some light reaching the hackle. The moral seems to be—for a fly fished between the sun and the salmon, no wing at all, or very little, but plenty of clear hackle and a translucent body.
>
> "But supposing one were covering the fish from the other bank, there would be a material difference in the conditions, and the fish, being between the sun and the fly, would be able to see every detail of a mixed wing, the colour of head and butt, the nature of body and ribbing, and so on, and with this in mind I should assume that now the intricate blend of metal, silk and feather was more likely to catch a fish than a fly of simple construction, which would be less noticeable and less attractive. So here I read another moral —for a fly fished beyond a salmon when the sun is behind the angler, a pattern which is striking by its blend of colour and arrangement, rather than one which depends on translucency."

It strikes me, as an old salmon-fisher, that any angler who decided upon carrying these *practical* considerations into effect would spend half his time in changing the fly with every change of his own position. If salmon

*Irideseence arises from reflected, not transmitted, colour-rays.

rivers ran as straight as a Roman road, he would only have to adjust his lures to the changes in the sun's position; but salmon rivers run most wanton courses, bending east and west, north and south, in a manner most disconcerting to the theorist; wherefore, praiseworthy as is Dr Ward's diligence in observation, and lucidly as Mr Sheringham has explained his conclusions therefrom, I, having but a very limited number of fishing seasons before me, despair of adjusting my practice to the niceties of sub-aqueous optics, and must needs continue under the impression received during the many fishing seasons behind me, which is that neither colour nor material in flies affects in the slightest degree the salmon-fisher's success, but that size of fly and reasonably life-like motion are all important.

My friend Mr P. D. Malloch described to me an instance which came under his own observation, and which bears upon the problem of what may attract a salmon. Looking over the parapet of a bridge—I think it was on the Tummel—he saw a couple of salmon lying in the pool beneath him. He felt in his pockets for something to throw to them, but he could find no more suitable missile than a peppermint drop, which he sent down. As it went twirling towards the bottom, one of the salmon moved slowly towards it, took it in its mouth, and presently expelled it. Had there been a hook in that simple sweetmeat, what a vogue might have been established for the novel lure!

SALMON-FISHING

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

THE angler, having equipped himself according to the precepts set forth in the foregoing chapters (so far, at least, as they accord with his individual fancy), will now proceed to the riverside to apply the apparatus of the craft to its purpose. Of that craft there is only one branch, namely, fly-fishing, whereon I can presume to offer any observations, forasmuch as a man should only preach what he is prepared to practise, and I have never practised any other.

And yet—and yet—I must not pose as being more virtuous than it lies in human nature to be. As was once remarked by a contrite sinner—"I can resist everything except temptation"; and the way in which I succumbed to temptation on one occasion is too deeply impressed on memory to be slurred over with an easy conscience. It was on that fine stream, the Logen Elv or Sand River, in southern Norway, and at that part thereof where, after pouring with much fury through a rocky gorge, the water spreads out into a wide, almost circular, basin which can only be fished from a boat, except at one point where the rush of the rapids first slackens. There is a recess in the cliff at that point, standing in which, at a height of five-and-twenty feet or so above the water, the angler can get his line over some very likely lies. Moreover he can see certain very interesting objects moving in the clear green spaces among the effervescing bubbles, and further down, where the bubbling ceases.

Well, to this pulpit I climbed one day, and there were the fish, sure enough, I suppose a couple of score of salmon, great and small, sailing leisurely about in the deep, strong water. I put my fly over them with much confidence; but it was in vain; not one would give it any attention —crikey! what was that? Just the biggest salmon I ever saw in my born days. It came round with the current, dwarfing a couple of twenty pounders in its wake into insignificance, and, just as my Silver Grey passed over it, the monster came to the surface, inspected the fly and—turned away. Aye, that was a moment, for he looked for all the world like taking; but it was not to be. Time after time, as the great fish's perambulation brought him within reach, I gave him the choice of a variety of flies, but I never again succeeded in getting the least sign of notice.

"CANNY WI' HIM, SIR! CA' CANNY!"

PLATE X.

[illegible]-FISHING

[illegible] HERBERT MAXWELL, BART.

[illegible] put himself according to the precepts
[illegible] far, at least, as they
[illegible] will now proceed to the
[illegible] craft to its purpose.
[illegible], namely, fly-fishing,
[illegible] observations, forasmuch
[illegible] used to practise, and I have

[illegible] more virtuous than it lies
[illegible] by a contrite sinner—"I
[illegible] the way in which I suc-
[illegible] deeply impressed on memory
[illegible] on that fine stream,
[illegible], and at that part thereof
[illegible] gorge, the water
[illegible] can only be fished
[illegible] rapids first slackens.
[illegible] fish, at a height
[illegible] get his line
[illegible] interesting
[illegible] bubbles,

[illegible] were the fish, sure
[illegible] great and small, sailing
[illegible] put my fly over them with
[illegible] one would give it any attention
[illegible] biggest salmon I ever saw in my born
[illegible] trout, dwarfing a couple of twenty
[illegible], and, just as my Silver Grey
[illegible] to the surface, inspected the fly and—
[illegible], for he looked for all the world like
[illegible] the great fish's perambula-
[illegible] the choice of a variety of flies,
[illegible] sign of notice.

E.E.B.

Here fain would I stop, for the rest is but a chapter of temptation and discomfiture. I sent and borrowed some prawns and tackle from a friend; I sullied my fingers by rigging out the unlovely crustacean upon the hooks, and I affronted the lordly salmon by dangling it before him every time he came within reach. He, as well as every other fish in the pool, treated the stinking bait with the contempt that I felt was my own due for using it, and I left him slowly gyrating in the green depths.

I dare not guess at the weight of this fish. He was a great, square-set male, rather red, with enormous fins, and he made every other fish in his company look like a grilse. That is the first and only attempt I have ever made to fish with prawn, and in all probability it will prove the last.

Only twice have I taken salmon on any other lure than the artificial fly—once, accidentally, when spinning in Loch Arkaig for the big trout fondly termed *Salmo ferox*, and once, by deliberate intent, spinning a bleak in a huge Norwegian river. Natural and artificial spinning baits, the loathly worm and the odoriferous prawn—all have enthusiastic advocates, and no doubt each calls for skilful manipulation; indeed I have heard it claimed for prawn-fishing that it is a more delicate art than fly-fishing. So it may be for all I know to the contrary, though it certainly does not look like it. Having no inclination to exalt fly-fishing at the expense of other methods of angling for salmon, let me state all that I consider the pros and cons of bait-fishing.

First as to pro: Undeniably there are certain salmon-haunted waters, such as Loch Tay or Loch Ness, where the fish lie so deep that it is futile to angle for them on the surface, and where they must be attracted by a spinning-bait sunk to within range of their vision. In such places the veriest tyro starts on even terms with the most experienced veteran, each relying upon the local knowledge of the boatmen, and enjoying an equal chance of having his bait seized by a forty-pounder. Neither skill nor knowledge bear any part in the performance so far, and this in itself surely tends to lower bait-fishing in the scale of sport. When a salmon is hooked, indeed, the odds turn in favour of the old hand, for lake salmon are often of great size and fight violently, and a novice is apt either to lose control in the first rush, thereby allowing the fish to get out of hand, which is a common preliminary to getting away; or he holds it too hard until the rod is pulled nearly straight with the line and a fatal rupture is the result.

Again, there are certain rivers, or places in them, where salmon must be sought with sunk bait or left alone. Such is the Foss Pool of the Norwegian Aaro, a river renowned for heavy fish, although its whole course from the foss (above which salmon cannot go) to the sea is only about a mile in length. The said Foss Pool is a swirling cauldron of immense depth; fly-fishing is out of the question, and nobody will question the legitimacy of offering the only class of lure that can produce any result. But the legitimacy, or at least the expediency, of raking with minnow or prawn a river where salmon rise freely at the fly is not so apparent.

It cannot be doubted that fly-fishing causes a minimum of disturbance to the fish in any stretch of water; whereas the flinging of a leaded bait made to traverse the actual lie of the fish must create a maximum of disturbance. Consequently if A is fishing a cast with fly from one bank it manifestly impairs both his enjoyment and prospect of sport if B—a bait-fisher—is plying, or has recently been plying, his craft from the other bank. It is quite true that, under certain conditions of weather, especially early in the season, salmon that refuse to rise at the fly may be taken with spinning-bait; but these occasions occur far less frequently than is alleged by advocates of bait-fishing. By far the greater part of my salmon-fishing in British waters has been in February, March and April, the months when spinning baits are most in vogue, and I have repeatedly compared the results of my exclusive use of the fly with those other baits used by my companions. These results usually balanced each other. I can remember one occasion only when bait beat fly hollow. That was in the bitter weather of April, 1904, when the late Lord Percy and myself fished the Spey at Wester Elchies for a week. It blew hard, with frequent blizzards, the whole time; he took nine salmon with gudgeon, while I killed but one with the fly.

Per contra: Fishing the Teith on February 17, 1871, I killed on the fly three salmon, 18½, 18 and 16 lb., and lost a fourth; whereas Lord Moray's keeper, fishing the same water on the same day with spinning-bait (reputed to be the only useful lure when there is snow in that river), failed to touch a fish.

The Tay is a river where, in the spring months, anglers are told to rely mainly on spinning-baits. How groundless is the belief in their superior attraction even when the water is full of "snaw broo'," let the following register of salmon killed *on the fly only* by three rods in the Isla-mouth

ON THE TAYMOUNT WATER.

and Cargill waters, with alternate days on Stobhall and Stanley. All three anglers were seldom out on the same day, but thirty-two salmon, not entered in the subjoined list, were killed on the fly by the Duke's guests during the period specified:

Date 1910.	Angler.	Number of Salmon.	Individual Weights, lb.	Total Weight, lb.
March 22	Duchess of Bedford	4	23½, 21, 15½, 13 (landed 17 kelts)	73
,, 23	Duke of Bedford	5	17, 15, 14, 14, 14	74
,, 23	Duchess of Bedford	8	20½, 20, 18, 16, 15½, 15, 12½, 11	128½
,, 23	Marquess of Tavistock	13	32, 21, 21, 18, 17½, 17, 16, 15½, 15, 14½, 14, 13½, 8	223
,, 24	Duchess of Bedford	10	24, 19, 16½, 15½, 12, 12, 8½, 8, 7½, 7	113½
,, 24	Marquess of Tavistock	1	14	14
,, 25	Duke of Bedford	2	14½, 12	26½
,, 26	Duke of Bedford	9	25, 25, 21, 19½, 16½, 16, 14, 14, 13	164
,, 26	Duchess of Bedford	1	19	19
,, 26	Marquess of Tavistock	1	15	15
,, 28	Duchess of Bedford	1	16½	16½
,, 28	Marquess of Tavistock	8	20, 20, 17½, 17, 16½, 13, 12½, 7½	140½
,, 29	Duke of Bedford	5	21, 19, 15, 8, 7½	70½
,, 29	Duchess of Bedford	3	20, 16, 10	46
,, 29	Marquess of Tavistock	1	14½	14½
,, 30	Duke of Bedford	7	17½, 17½, 16½, 16, 16, 15, 12	111½
,, 30	Duchess of Bedford	2	14½, 15	29½
,, 30	Marquess of Tavistock	1	16	16
,, 31	Duchess of Bedford	2	16, 15	31
,, 31	Marquess of Tavistock	4	24, 22, 17, 11	74
April 1	Marquess of Tavistock	3	17, 17, 7½	41½
,, 2	Duchess of Bedford	4	19½, 17½, 15½, 6½	59
,, 4	Duke of Bedford	3	18, 18, 16	52
,, 5	Duke of Bedford	1	19	19
,, 5	Marquess of Tavistock	2	18, 11½	29½
,, 6	Marquess of Tavistock	1	14	14
,, 7	Duchess of Bedford	1	18	18
,, 7	Marquess of Tavistock	1	7½	7½
,, 9	Marquess of Tavistock	3	16, 15, 8½	39½
,, 16	Duchess of Bedford	10	24, 22, 18½, 17, 16, 14½, 13½, 12, 9½, 8½ (all caught in 3 hours and 10 minutes)	155½
,, 18	Duke of Bedford	6	18, 18, 15½, 15, 10, 9½	86
,, 20	Duke of Bedford	1	7	7
,, 20	Duchess of Bedford	5	28, 17, 16, 15, 11	87
,, 21	Duke of Bedford	3	17, 12½, 7	36½
,, 21	Duchess of Bedford	1	7	7
,, 22	Duke of Bedford	2	19, 16½	35½
,, 22	Duchess of Bedford	6	20, 19, 17, 16, 15, 12½	99½
,, 23	Duke of Bedford	7	21½, 20½, 18, 18, 15, 10, 10	111
,, 23	Duchess of Bedford	1	22½	22½
,, 25	Duke of Bedford	2	19, 18	37

Date 1910.	Angler.	Number of Salmon.	Individual Weights, lb.	Total Weight, lb.
April 25	Duchess of Bedford	7	26, 22, 20½, 20, 18, 8, 8	122½
,, 26	Duke of Bedford	4	19, 19, 18, 6	62
,, 26	Duchess of Bedford	1	19	19
,, 27	Duke of Bedford	2	18, 18	36
,, 29	Duchess of Bedford	1	14½	14½
,, 30	Duchess of Bedford	2	20½, 18	38½
May 2	Duchess of Bedford	1	18	18
,, 3	Duchess of Bedford	2	19½, 18½	38
,, 4	Duchess of Bedford	2	17½, 7	24½
,, 6	Duchess of Bedford	2	16, 15½	31½
,, 7	Duchess of Bedford	1	15½	15½
	Total Salmon	176	Total weight Average weight . . 16 lb. Heaviest fish . . 32 lb. Lightest fish . . . 7 lb.	2,827

As for the Tweed, that noble, most productive, but ill-used river—over-netted in spring and summer and kept open unreasonably late for rod-fishing to propitiate the upper proprietors who are robbed of their fair share by the nets, and ruthlessly poached during the spawning season—the Tweed, I say, suffers further under the reproach of refusing to yield spring salmon except to spinning-baits. Never was calumny more groundless. Spring salmon are seldom taken from the Tweed with fly because fly is seldom offered to them. Here and in other rivers where bait is allowed, the fly perhaps is tried for an hour or so without success; then the sensitive, finely-poised greenheart is exchanged for a stiff, stunted, unsympathetic spinning-rod, and if a salmon or two come to hand in the course of the day, it is held that the superiority of bait over fly has been demonstrated.

Once I came across a salmon in the Dunkeld water of the Tay which manifested a finely catholic taste in the matter of lures, for it took a "Gordon" fly offered by me as readily as it had previously taken a gudgeon belonging to somebody else, which, with a whole flight of hooks and a few inches of gut, were hanging from the poor creature's lip when I landed it. This fish was a large kelt.

From what is written above, the reader who elects to fish with bait will expect no further counsel from me, but will seek it elsewhere. I cannot, however, refrain from noticing one most remarkable result of

STOBHALL, ON THE TAY

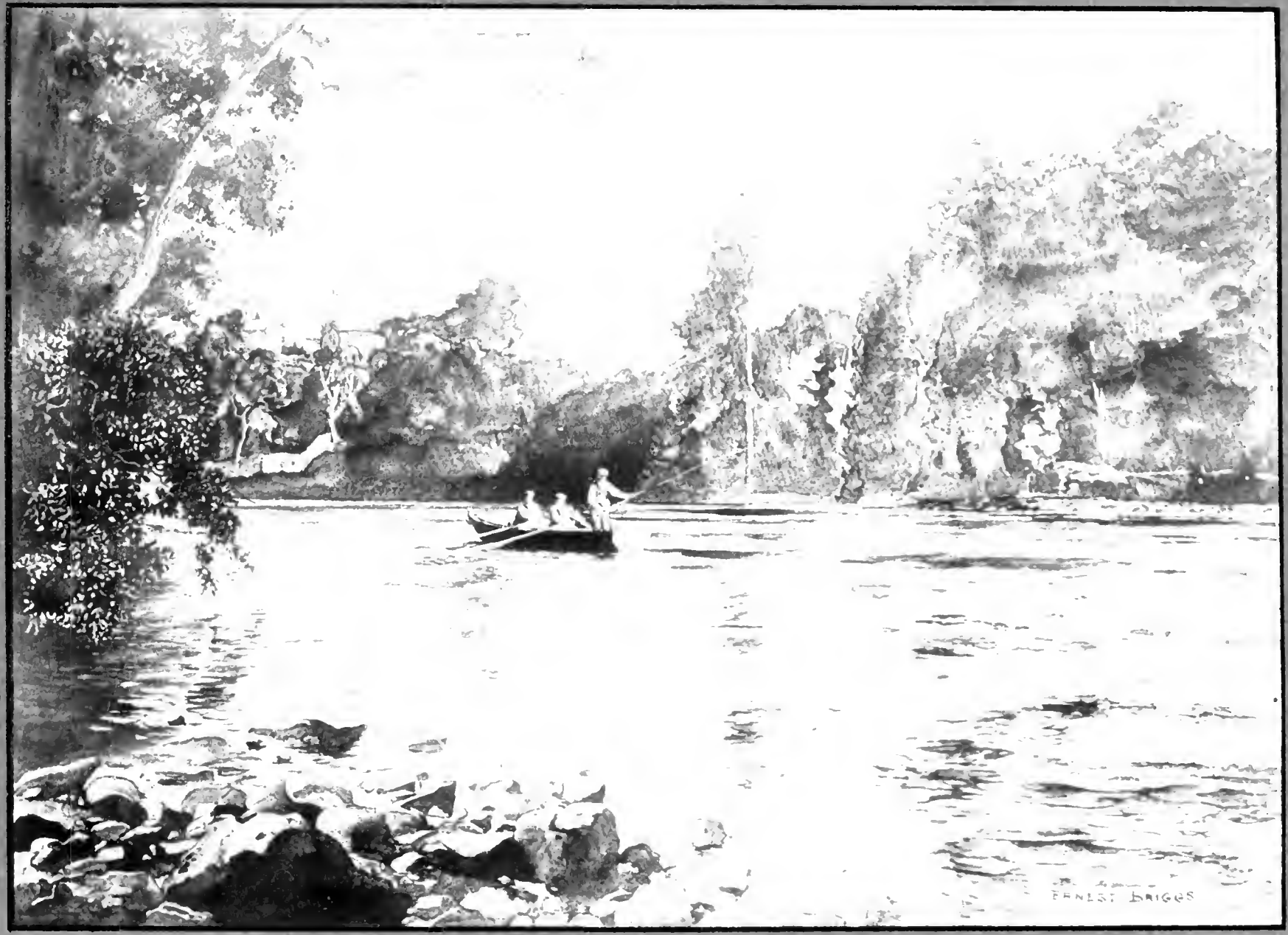
PLATE XII.

		Individual Weights lb.	Total Weight lb.
		[illegible] 29, 15, 3, 8	122½
		[illegible] 6	62
			19
			35
			14½
			58½
			18
			38
			24½
			31½
			15½
		Total weight	2,827
		Average weight 16 lb.	
		Heaviest fish 32 lb.	
		Lightest [illegible] 4 lb.	

[illegible] used river—[illegible] unreasonably late [illegible] who are robbed of [illegible] during the spawning [illegible] reproach of refusing [illegible]. Never was calumny [illegible] the Tweed with [illegible] where [illegible] without success; [illegible] for a stiff, stunted, [illegible] two come to hand in the [illegible] superiority of bait over fly has been [illegible]

[illegible] the Dunkeld water of the Tay which [illegible] in the matter of lures, for it took a [illegible] which had previously taken a gudgeon [illegible] which, with a whole flight of hooks and a [illegible] hanging from the poor creature's lip when I landed [illegible]

[illegible] the reader who elects to fish with bait [illegible] from me, but will seek it elsewhere. I [illegible] nothing one most remarkable result of


ERNEST BRIGGS

Dr Francis Ward's experiments which have been referred to in the last chapter. No satisfactory explanation had ever been offered of the fact that a small fish used as bait becomes more attractive to large fish when it is made to spin in a most unnatural manner. Dr Ward has cleared up the mystery in his volume entitled "Marvels of Fish Life," which I cordially commend to my brother anglers as a treatise equally entertaining and instructive. From his subaqueous chamber, and by the aid of photography, he has elucidated the puzzle why so many fish—salmon, herrings, dace, etc., have glittering silvery sides, which, from a human standpoint, seems to render them conspicuous and therefore more liable to attack from predacious enemies. So far is this from being the case, Dr Ward has shown conclusively that the shining panoply is indeed protective, because, so long as the fish retains its normal position, belly downwards, and illuminated from above, its silvery scales act as a mirror, reflecting the surrounding weeds, water or rocks. Directly it changes its sides from a vertical to a horizontal or slanting position, the mirror reflects the light of the sky and we see the fish flashing in the water. A bleak, therefore, swimming leisurely in the current is but faintly visible; put the same fish on a trace and cause it to spin, and it becomes a sparkling object.

If I am unable to offer any counsel upon bait-fishing for salmon, neither can I undertake to expound the more graceful art of fly-fishing in such manner as will enable the inexpert to dispense with ocular demonstration by an adept. Reams have been written—folios printed—giving minute instructions for executing the various methods by which a salmon-fly may be projected to a satisfactory distance; but never have I been able by perusing them to add one tittle to the modicum of skill acquired by watching others. Only one precept can I think of that is of general and invariable application in casting a salmon-fly, namely, that it must be done from the shoulder and not, as in trout-fishing, from the wrist and fore-arm. Whether the particular action be that of the overhead cast, the underhand cast, the switch or any modification of the Spey cast, the arms must work in an even sweep from the shoulder. The commonest fault in salmon-fishers is casting from the elbows. It is quite possible to get out a fairly long line by that action, but it entails far greater exertion than when the arms sweep freely from the shoulder. Moreover the rod resents it. It is possible to pronounce by the sound alone from which joints in his arms an unseen salmon-fisher is casting. If it is from the

elbow, the rod makes a loud "swoosh" in the forward stroke; if it is from the shoulder, the cast will be noiseless, unless it be made against a stiff breeze, when the line will make a whistling sound.

When fishing with a fairly long line, it is expedient to shorten it before recovery for the next cast by drawing in two or three yards which, lying loose, may be released at the moment of casting. In overhead or underhand casting, but not in Spey casting, it should be the fisher's object to cause the fly to fall on the water, if not before the line, at all events not after it. It must be confessed that, in a swollen river, a lubberly cast is almost as likely to raise a fish as a skilful one, but the act of casting becomes a pleasure when the knack of doing it artistically has been acquired; and it will be found that if, at the last moment of delivering the cast, a slight tilt upwards is given to the butt, the line will extend itself more freely, and the fly drop more lightly than when the action is a single forward one. This tilt also allows the loose line to run more freely through the rings.

All the motions in casting must be even and continuous; nothing approaching a jerk must be permitted, save in the last movement of the Spey cast. The end of the cast is quite as critical as the beginning. After drawing in two or three yards of slack, there should be a momentary poise before lifting the fly from the water, first, to prepare the rod for the strain of lifting a heavy line, and second, to avoid a smash by a fish taking it at the last moment. Many a top joint has been shivered by a salmon seizing the fly just before it is violently snatched from the water; still more often a salmon which has followed the fly round and is about to seize it, has had it whisked away from him. It is a rule to which I have never met with an exception that a fish disappointed in that manner cannot be tempted to renew the offer.

This leads to another point in practice wherein salmon-fishing differs essentially from trout-fishing. The trout-fisher, no matter how adept he is—nay, *the more* adept he is at his own craft—must break himself of the habit of striking on the rise. Nothing is more difficult. In trout-fishing, unless one strikes directly the water is seen to break, it is not likely that the trout will be hooked. If one does so in salmon-fishing, he is almost certain to miss his fish. I have satisfied myself of this by watching from a height the fly of an angler below me. A salmon rises to the fly; sometimes he takes a look and sinks down again without breaking the surface of the water. The angler is unconscious that he has moved a

Photo by] FISHING PARTY ON THE TAY. [P. D. Malloch.

fish. At other times the salmon will come up, pause behind the fly, and then seize it, still without perceptible commotion of the surface. The first intimation of the rise is communicated to the fisher by the stoppage and tightening of the line. Again, a third fish may rise to the surface, causing a boil in the water, or even showing himself well above the surface. That is the trying moment for the fisher. Woe betide him if he strikes at sight! That is to snatch away the fly from a willing taker; the fish departs disappointed, and cannot be induced to repeat the offer. The visible rise was caused by the salmon coming up to have a look; a second later, had the steady motion of the fly been continued, it would probably have been seized, and the fish have hooked himself satisfactorily.

In exceptionally rough water, where a salmon is lying in the slack between two driving currents or in the cushion of water formed *above* a rock,* he may rise with a sudden swift dash without the customary poise. In such a case the fish will make himself felt before the angler can strike with a heavy rod.

The form of rise most trying to uncertain nerves happens in smooth water when the wave of a fish betrays that he is following the fly. On no account should the movement or rate of the fly be altered; I have often seen a salmon swim leisurely after it and seize it within a few feet of the near shore. If the fisher has the nerve and knowledge to keep the fly moving steadily, he is pretty sure to hook his fish, and a fly taken in this manner usually gets a firm hold.

Once the fish is felt to have taken the fly, the angler may strike home if he likes; though, for my own part, I do not believe in any more of a strike than is caused by raising the rod quickly to the angle of action. Striking a trout is done by a slight jerk from the wrist; hooking a salmon is best done by its own weight upon a raised rod.

The trout-fisher, at least the fisher for large trout, will have been trained to keep his fingers clear of the line, and to strike from the reel. In salmon-fishing it is different: the forefinger of the uppermost hand should be kept firmly on the line. The reason for this difference is obvious. Gossamer gut is liable to snap when a big trout takes the fly, unless the line is allowed to run freely from the reel; but salmon tackle must be so strong as to stand a pluck heavy enough to bury the barb of a large

*The common belief that a salmon rests behind a rock is generally erroneous. In nine cases out of ten the sheltering rock is behind the fish. I was able to convince a friend who expressed incredulity about this by taking him upon the bridge over the Kvina, below Liknæs. We could see eight salmon lying there in the heavy stream, every one having a big rock behind him.

hook. The check of the reel may be stiff enough to do so; but unless a finger is kept on the line, the salmon may run out a lot of it and be out of control for some moments after it is hooked. Personally I have acquired the habit —be it a good one or not—of holding a bight of the line in my disengaged hand, and giving a jigging motion to the fly. I do not know that this makes the lure more attractive to the fish, but I fancy it gives the fisher an additional thrill at the moment of hooking.

Here, then, are three particulars wherein the fly-fisher for trout must alter his practice when he aspires to salmon. 1st, the cast is made from the shoulder instead of from the elbow or wrist; 2nd, he must keep a finger on the reel-line till the salmon is hooked; and 3rd, he must exercise the strictest control over himself so as not to alter the movement of hand, rod or line when he sees a salmon come to the fly.

I have laid stress upon these three points because they are those most likely to escape the notice of one watching an expert salmon-fisher at work. Everything else in casting may be acquired, as aforesaid, from example far better than from written dissertation; and this applies with even greater force to the Spey cast, whereby an adept can fling a far longer line than anybody can manage overhead or underhand. Directions for making the Spey cast have been given over and over again in works on angling, but it is extremely unlikely that anyone ever acquired the valuable knack by studying them. There exists a still more cogent reason for not attempting to give instruction in the Spey cast on this page, to wit, that I have never acquired the knack myself. When the wind blows downstream and (this is very material) when no critic is watching me, I can get the fly fairly well over the river by a sort of Spey cast; I have often landed fish hooked by this means; but I am always surprised when the performance comes off satisfactorily.

As in casting, so in fishing a stream or pool, there is no means of communicating the proper method except by example. Here again salmon-fishing differs materially from trout-fishing—the experienced trout-fisher knows pretty well where to look for trout even in a stream which he has never seen before; but no matter how well versed the salmon-fisher may be in his craft, in coming to an unfamiliar river he must rely upon his gillie for guidance where to cast his fly. In some of the likeliest looking places salmon never lie, or, lying, will not take the fly; while the surest spots may be devoid of any feature to attract a stranger's attention.

There is only one method of fishing a cast which one is not likely to pick up from watching an ordinary salmon-fisher, because, except in fishing the Tweed " dubs " from a boat, it forms no part of the common practice, although in effect I have found it very deadly. It consists in fishing a stream upwards from the foot instead of downwards from the top; not casting up stream, but rather more across than when moving down, and, as soon as the line is on the water, moving upwards two or three paces after every cast. Where the current is fairly brisk it may be fished first from the top to the bottom in the usual way; then drawing out a few yards more line throw the fly straight across the river and take a couple of steps backwards, continuing the movement till you reach the top of the pool. This is called " backing it up."

Times without number have I known salmon succumb to these tactics, after showing indifference to the orthodox downstream approach. Whether or no the fly coming up from behind a fish excites his curiosity more forcibly I know not, but certain it is that he is more likely to be securely hooked, owing to the angler's backward movement having taken the bight out of the line. My experience on February 26, 1900, may be cited in favour of this mode of fishing a cast. On that day I had beats 1 and 2 of the Helmsdale river at my disposal. The water was very heavy, and there was a sharp frost in the morning. Beginning at Kilfedder Pool, the lowest cast on No. 2, I touched three fish slightly in fishing it down. I then began backing it up, and by the time I got to the top I had five spring salmon on the bank. I then fished down the whole length of No. 1 beat without moving a fish. Having arrived at the bottom of the Flat Pool, the lowest in the river, I backed it up, and again when I reached the top of the pool I had five salmon out. On the way home I fished Saliscraggie stream down, getting an eleventh fish in eleven consecutive rises, and without seeing a kelt all day.* Ten out of these eleven fish were killed in backing up. On this occasion there was the less reason to expect advantage from this method because, owing to the high water, there was plenty of movement in all the pools; but in a sluggish river like a great part of the Thurso, it is the only means of covering the water effectively. It was in that river that I learnt the merit of this device long ago; since when I have killed far more salmon in that way than in fishing down, in those rivers where it is possible to cast from the bank. Of course it cannot be done where one has to wade.

*These were all small spring fish—11, 10, 9, 8½, 8½, 8½, 8, 8, 8, 8 and 7 lb.

However widely anglers differ among themselves about the amount and degree of secondary movement that should be given to the fly (and they do differ considerably both in theory and practice), nearly all are agreed that a low rod-point and a sunk fly are features of sound fishing; yet I have known the contrary practice meet with remarkable success. Any orthodox salmon-fisher watching for the first time the late Dr Begg, of Reedsmouth, fishing the North Tyne which flowed at the foot of his garden, must have pronounced him an ignorant bungler, for he used to fling his flies (he always fished with two woolly, over-feathered things) at right angles to the stream, and, raising his rod-point aloft, drew them along the surface to his feet. Hopeless, one should say, especially as he always fished with treble gut and never varied the size of his flies, no matter what were the conditions of weather and water; yet in the season of 1867, when I first made acquaintance with the North Tyne, he killed upwards of 150 salmon and grilse.

Salmon almost invariably take up their station in the main stream; it is therefore vain to look for them in those side channels which a great river sometimes forms, and which often prove well worthy of the trout fisher's attention. But in a high water it is sometimes profitable to fish those backwaters where the current runs strongly in the contrary direction to the course of the river. One of the severest runs I ever had was with a fish hooked in the backwater of the Pass Pool on the Leny above Callander. I had nobody with me, and a hard job it was to follow the salmon, which ran straight out of the pool into the rough rapids below. Down, down he went, and down, down I followed him, waist deep at times where trees stood in the flooded river. It was early in February and the water was uncommonly cold, but I was hot enough by the time we got down—the fish and I—to Black Donald's Pool, about 400 yards below the Pass pool. Imagine my chagrin when I found I had taken a ducking for nothing; the line lay loose in the water; probably the fish had broken away as it caught among the rocks in that terrific rapid. I began winding in disconsolately. Just then Anderson, Lord Moray's keeper, came along. I was in the middle of a description of my mishap when I found the shortened line pointing up stream, hanked on a rock, I supposed, and was on the point of handing the rod to Anderson to release it, for I was tired and cross, when I felt a pull—another, and another. The fish was still on, and we soon had him out, a fine springer of 18½ lb. Since then I have never neglected a likely backwater in a high river; but I must

Photo by] [P. D. Malloch.

HARLING: BENCHILL WATER, TAY.

confess that only on two occasions has my diligence been rewarded. Once, on March 21, 1903, I started to fish the Dunkeld water of the Tay, only to find the river too big, rising fast, and getting dirty. Already branches and rubbish were tossing on the stream, so I turned to go home. Passing the Warren Pool I was tempted to put a big fly over the strong backwater that washes the north bank. The line was hardly out when it tightened strictly upon something—a floating branch, methought, but only for a moment. I was fast in something better; in a few minutes I brought up a pretty sixteen-pounder to the gaff, and hied me home well pleased at this stroke of luck.

There remains only one other mode of fly-fishing for salmon to be noticed, to wit, that known as "harling," which is practised from a boat on rivers so wide as cannot be fished from the bank or by wading, and where the current is too strong to allow casting from a boat rowed against the stream, as is the custom in fishing the Tweed "dubs."* In Scotland the Tay is the only river in which resort is had to harling, and in Norway the Namsen is the type of river where the same method has to be adopted.

Two, generally three, rods are projected from the stern of the boat, with flies or other lures trailing at the end of thirty yards or so of line. Beginning at the head of the pool the boat is rowed gently backwards and forwards across the river, being allowed to drop a little lower at each turn. The angler has nothing to do but keep awake, so as to be ready to take up the rod smartly when a fish hooks itself. Notice of that is conveyed to him by the fall of a pebble which is placed on the bight of the line close to the reel, and which is jerked off when the fish takes hold. While the angler attends to the hooked fish, the boatman rowing stroke reels up the other two lines out of harm's way.

Harling is undoubtedly a deadly form of fishing, for the three flies or other baits traverse every foot of likely water without the slightest exertion on the part of the angler; but it is an indolent pursuit; it deprives the angler of that most exquisite sensation—the first pull of a salmon taking the fly; therefore harling should never be practised where fair casting is possible. On a great river in a state of flood it affords really the only reasonable chance of sport; but even on such a river as the Tay, it is quite

*These dubs are characteristic features of the lower part of the Border river. The term is applied to the long, placid reaches with languid current, as at Sprouston, Birgham, Carham, etc. They hold great numbers of salmon at times.

possible to cast many of the streams effectively from a boat, although the temptation to the easier and lazier method seems irresistible to the majority of anglers on that fine river.

Whether a salmon be hooked from the bank, from wading or by casting or harling from a boat, the main purpose of the angler should be to maintain effective control over his fish from the first. Not a single yard of line should be given except under compulsion. If the fish runs down or upstream, try and keep abreast of him, thereby avoiding manifold risks. One reads occasionally of prodigious fights with salmon lasting for several hours, but it is very seldom indeed that a practised salmon-fisher allows a fish fairly hooked in the mouth to play for more than fifteen minutes, provided he can follow that fish. A salmon foul hooked in the body or in a fin may take far longer. There are places, of course, where the nature of the river bank—trees, rocks or other obstacles—render it impossible to follow a fish. If a salmon runs downstream and can neither be followed nor coaxed to swim up again, he may set his captor at defiance for an indefinite period. But given the power of keeping abreast of the fish and an understanding of its position in the water, the struggle should end in one way or another in a very few minutes. Considering that the utmost strain that can be exerted by the fisher with the strongest tackle amounts to no more than about 3 lb., it is surprising how soon the power of a fish is exhausted, if it is intelligently handled.*

That salmon are not always intelligently handled may be judged from the absurd descriptions one reads of fish sulking or deliberately rubbing the line against a sharp rock so as to sever it. A fish is pronounced to be sulking when it remains without movement in deep water. Imagination pictures it prone at the bottom, ensconced behind some mighty rock; but the true position of that fish is vertical—head down, tail up—and all that the angler need do to set him moving is to lower the rod sideways and pull the fish off its balance. This cannot be done, as aforesaid, if the angler is a long way above the fish and is unable to get abreast of him.

And so it is in every passage in the conflict. Let the angler realize the true position of the fish and make him fight the whole time. If he runs determinately, so much the better, he will be the sooner exhausted, especially if the full strength of the tackle is opposed to him; if he turns

*People often express incredulity about the limit of strain which an angler can put upon a fish with the rod upright or at a safe angle. A strong gut cast may lift a weight of 10 lb. or 12 lb., but human arms will not prevail to raise a 4 lb. weight from the ground when attached to a line at the end of an 18-foot rod. Try it!

sluggish, pull at him sideways and make him move, always keeping as near him—that is, with as short a line—as possible. The most dangerous manœuvre a salmon can execute is to run downstream with the reel spinning, and then turn sharply to run upstream, causing a heavy bight in the line. If he leaps at the end of that manœuvre, the resistance of the submerged line may snap the gut or the bagged line may catch round a boulder and the fish escape.

It is well known to those who have experienced the difference that a salmon in a Norwegian river will show much wilder fight than the generality of fish of similar weight in British waters. It is not certain whether the Scandinavian fish are really more vigorous than the others (it is certain that a 1 lb. trout in a Highland loch takes far more killing than one of double its weight in an English chalk stream), or whether the greater severity of the conflict is owing to the superior weight and force of the current. The lower portion of the Spey is the only British water which the present writer has fished equal to a typical Norwegian river in volume and violence; and there, if a heavy salmon means to go down and gets his broadside against the stream, it tests both wind and limb to keep on terms with him. A friend of mine, fishing the Norwegian Rauma, happened to hook a pine-log floating down in midstream. Being unwilling to sacrifice a good casting line and fly he held on and followed it, trusting to the chance of getting that log into some slack water. It took him down the distance of a full mile, and broke away in the end. My friend said he had never had such a severe and checkless run with the wildest fish.

As a rule, it is expedient to deal vigorously with a fish from the moment it is hooked. If the hook has taken but a slight hold, the chance of landing the fish is not improved by prolonging the struggle through gentle handling. *Suaviter in modo* is right in offering the fly—*fortiter in re* immediately it is taken. The only exception to this arises when a fish is hooked in a dangerous place, as on the brink of a fall over which there is risk of his going. Here tender dealing at first may succeed in leading the salmon away from the point of danger, when rough treatment would frighten him into the thick of it. There is a fall of this nature on the Camisky water of the Lochy, above Torrs Castle, where the fish may take the fly where the water is actually sloping to the abyss. Goodness only knows what would be the result of a fish going over that cataract; such a contingency never befel me in that place; though it did in a similar

one at the foot of the Rough Isle of the Minnick. On that occasion I managed to follow the salmon through the roaring rapids below, and killed him in the Kettle Pool. Not so happily, for me at least, did my encounter end with a wild fish in the Norwegian Kvina in the summer of 1911. Hooked at the top of the Boat Pool (so called because there is no boat there) this fish never rested a moment, but tore up and down the whole length of the stream without a moment's hover or pause, finally disappearing over the fall at the foot, where no tackle could hold him and whither I could not follow.

The position of the rod in playing a fish is a matter of cardinal moment. The line must be kept taut all the time, but the rod must never be allowed to fall so nearly into a plane with the line as to lose the play of the flexible top joint. If that should occur a sudden plunge or twist by the fish would assuredly break the casting-line or the hook. It is the elastic pressure of the top and middle joints that eventually wears out the strength of a salmon. But if nothing else were done to bring the struggle to a conclusion, it might be indefinitely prolonged. The humane angler, desiring to be mercifully prompt in bringing it to an end, has another resource at his command—he can make his fish feel the power of the butt. Now this process has been the subject of endless misapprehension. To give a fish the butt is often understood as raising the rod to the perpendicular or beyond it as shown in Plate XV. To do so is to take the strain off the butt and to throw it upon the slender upper parts of the rod. To bring the power of the butt into play the rod should be held at about an angle of 45 deg. (Plate XVI), which, while retaining the play of the upper joints so as to relieve the strain on the line, throws the chief weight upon the strongest parts of the rod.

There are times when a man may have to land heavy fish unaided by gillie, gaff or net. On such occasions the character of the river bank becomes an important consideration, for the salmon must be "tailed" —that is, played till quite exhausted, towed into shallow water and grasped by the small of the tail. It is a delicate but fairly simple operation, when the shore is shelving, like the gravelly beach of the cast called Jock Sure in the Bemersyde water of the Tweed, where the boatman Moodie, fishing alone late one evening, hooked, played and tailed out a salmon of 42 lb. It is a difficult, often impossible, feat where the current is deep and swift and the sides rocky and precipitous, as I found to my cost one day when two ladies expressed a wish to see a salmon killed, which they had never

THE WRONG WAY OF "GIVING THE BUTT."

THE RIGHT WAY OF "GIVING THE BUTT."

had the chance of doing. We were sitting at luncheon. At the foot of the garden runs the Penkill, a mountain tributary of the Cree, much frequented by sea-trout and occasionally harbouring an odd salmon or two. It was in high spate at the time, and I volunteered to show them how the trick was done. Accordingly, I borrowed a rod and tackle from my host and off we set; but so slender did I deem the chance of meeting a fish that I did not take a gaff with me. There is a pretty pool below a bridge in the garden. I ought to have crossed the said bridge, for the bank is clear on the far side with a strip of shingle; but I stupidly began casting from the near bank over a thicket of rhododendron, with the stream rushing deep and swift along the rocks below them. At the third or fourth cast up came a nice little salmon of 9 lb. or so, and hooked himself. I was helpless, I could not lead the fish downstream, for the trees grew close down to the water edge. Forcing my way through the rhododendrons, I got down on the rocks, and, when the fish was ready for the gaff I ought to have brought, I brought him alongside repeatedly, but as often as I did so the stream swept him away. Twice I actually had my hand on him, but could not get a grip of his tail. At a third attempt, the hold gave way and my fly was left dangling in mid-air.

One autumn day's experience in the North Tyne ought to have convinced me of the folly of going salmon-fishing without a gaff. The river had been pronounced unfishable, being in high flood and discoloured. However, being lodged in a small country inn without much resource of recreation, I took my rod and went up alone to the Hargroves water for a stroll. Seeing a fish rise at the edge of the Chalet stream, I put a big fly over him, little expecting him to take notice of it. He not only took notice, but he took the fly, and after becoming resistance, was tailed out. This encouraged me to persevere; the streams were full of fish, so that, despite the unpromising condition of the water, by nightfall I had tailed out no fewer than ten fish weighing 90 lb., breaking my top joint three times in doing so. It is impossible to calculate the amount of time lost in playing the fish owing to the want of a gaff, and in splicing the rod which the gaff would have saved from being broken; the slain would probably have numbered half as many again but for my carelessness.

The observations in this chapter have been directed to salmon-fishing in rivers; there remains but little to be said about fly-fishing for salmon in lakes, because there are comparatively few lakes in which that branch

of angling is profitable. In most great lakes salmon lie too deep to be attracted by surface lures; but there are smaller sheets of water with a moderate average depth where excellent and exciting sport may be had with the fly. Most of the fishing has to be done from a boat, which has this advantage, that a lighter rod—say 14 or 15 feet long—can be used than is required in a river where long casting has to be done; but to enjoy lake-fishing for salmon in perfection it must be practised where the angler can cast from the shore or by wading—conditions which are seldom to be obtained. The charm of such a situation consists in the wild rush which a salmon, when hooked in comparatively shallow water, makes for the deep, tearing out perhaps a hundred yards of line from the fisherman as a fixed point.

Another delightful feature in lake-fishing with fly is the usual character of the rise. In river-fishing half—more than half—the salmon hooked never break the surface when taking the fly. In four cases out of five the angler feels his fish before he sees it; but in lake-fishing the proportion is reversed, and this undoubtedly makes the sport more exciting. It also imposes a severer test on the fisherman's skill, for he must own a steady set of nerves who can refrain from striking when he sees a great salmon launch himself out of the side of a wave or roll up at the fly, head and tail on the rippled surface of the loch. Just as in river-fishing, so in lake-fishing, the penalty for striking at a salmon on the rise is to miss the chance of hooking him.

And now let me refresh the reader, wearied with this long technical dissertation, with a glimpse of Highland sport on the noblest river in Scotland, as it was my privilege to enjoy it during the present year.

Brown, blue, rifle-green, and again brown—these are the prevailing tints in the February landscape of lower Strathspey. But the brown is no uniform monotone; that term must serve to express many shades—dull umber of ploughed land, wan tint of dormant pasture, golden russet of withered fern, purpled hue of budding alder and birch, tawny spray of larch, and the sombre, yet kindly, gloom of moorland. Thousands of acres of solemn pines mantle the uplands with rifle-green; to the south, Ben Aigan and Ben Rinnes strike the note of blue, and behind them the horizon is looped and folded by the great Cairngorm range—the only Scottish mountains which the primitive Gael distinguished by the epithet "gorm"—blue.

There is plenty of human industry in this spacious strath, but for the

most part it is silent. The ploughs are busy on the cornland, but the share turns the lea noiselessly; a man may pass a whole day beside the river without hearing a sound betokening the presence of his own kind, except, it may be, the barking of a distant collie doing its master's bidding. Wading waist-deep in pursuit of spring salmon, I can hear nothing but what he might have heard who first penetrated the solitude of Strathspey at the close of winter—the humming of a nor'-easter among the pines, the rushing of a swollen river, and the querulous piping of a flock of brilliant oyster-catchers.

Presently another and a very different note rises clear above the rumbling of the water. Far up on the opposite cliff a blackbird begins to carol among the pines—the first of the season in this northern latitude. What quality there is in the voice of that diminutive creature, causing it to be heard clearly above the roar of the swiftest and most violent river in the United Kingdom—a triumph of quality over volume of sound. And I hold that the merle is distinguished among all British songsters by the quality of its song. The throstle is more voluble, but its melody lacks the liquid purity of the merle's; besides, it repeats the same passage so incessantly as to become almost wearisome. The blackbird's song is not so well sustained, but its variety is infinite. This train of thought was interrupted by a sudden, violent wrench at the three-inch fly which I had been flinging rhythmically and mechanically over the troubled waters for the space of an hour and more. Bending greenheart and singing line—the acme of an angler's desire—followed by tremulous speculation whether the fish should turn out to be a springer or a kelt, presently to be solved by the said fish throwing itself in the air at the end of a brisk run and displaying the matchless shape and shining mail of a twelve-pounder fresh from the salt water. Less than ten minutes suffice to end the contest in favour of the biped, and another minute must be given to contemplation of the lustrous prize.

One never tires of admiring the exquisite form and colour of a new-run spring salmon. No vertebrate animal displays a more perfect adaptation of build to its mode of life—rapine by swift movement through strong water. The strange thing about the salmon is that, unlike most vertebrate creatures, it parts with all its comeliness on the approach of the nuptial season. The beauty of other animals usually is enhanced at the pairing time—the cock-pheasant raises a jaunty crest, his scarlet comb increases in size and brilliancy, his plumage gains a fresher sheen than at any

other season. And so it is with mammals—the stag does not go courting till his antlers are at their prime; but from the moment a salmon quits the ocean to repair to the connubial shallows, it steadily deteriorates in appearance until it becomes positively unsightly. The head of the male lengthens and coarsens; his silvery coat tarnishes to dirty red and brown, the scales becoming half-buried in slime. The change in the female fish is even worse. There is no more flagrant case in nature of *corruptio optimi pessimi*, for, as a "baggit," she loses all her graceful shape, and her shiny sides and snowy underparts become overspread with a disagreeable sooty stain, almost black in some places.

One might go prosing about salmon-fishing to an indefinite length so powerful is the spell it casts over its votaries; but a sense of proportion restrains me, and I must pass on to discuss the lesser nobility among the *Salmonidæ*. I can think of no more fitting close to this chapter than certain lines which I picked up when I was a boy, whence or by whom I know not, but I have left boyhood so far behind that the question of copyright cannot arise.

SAUMON.

Air—"Cauld kail in Aberdeen."

There's haddies in the Firth o' Forth,
  There's turbot big and sma', man;
There's flukes, though they're but little worth,
  There's caller ou'* and a', man.
But fish in shell or fish in scale
  Whate'er ye like 't to ca', man,
There's nane can doot the very wale†
  O' fishes is a saumon.

There's herrin' catch'd aboot Dunbar,
  An' whitin's aff Skateraw, man;
But wha sae daft as to compare
  The like o' them to saumon?
The English folk like whitin's best,
  The Dutch eat herrin' raw, man;
But ilka body to his taste—
  An' mine's content wi' saumon.

*Fresh Oysters. Rapid and recent as are the changes, social, commercial and other, that have swept away ancient landmarks and immemorial customs, they have not yet prevailed against the Newhaven fish-wives.

†The best, the pick.

SALMON-FISHING

Oh! mark him rinnin' frae the tide,
  In blue and siller braw, man;
The ticks upon his gawsy* side,
  Shaw him a new-rin saumon.
An' though he 'scape the Berwick net
  The Duke at Floors and a', man,
There's mony a chance remainin' yet
  To catch that bonnie saumon.

Across the pool the fisher's flee
  Fa's licht as ony straw, man;
Soops down the stream, an' syne† a wee
  Hangs trem'lin' o'er the saumon.
A moment mair—the line is stent‡—
  A rug§—and then a draw, man;
And noo the supple top-piece bent—
  He's taigled‖ wi' his saumon.

Frae aff the birling¶ reel the line
  Like lichtnin' spins awa', man;
The fisher laughs, for he kens fine
  He's heuked a guidly saumon.
He's up—he's doun—he's here—he's there,
  Wi' mony a twist and thraw,** man;
Noo deep in Tweed—noo in the air—
  My troth, a lively saumon!

Though strenth an' nature for a while
  Can warstle†† against a', man,
Yet nature aft maun yield to guile
  As well in man as saumon.
An' sae that merry fish that rose
  To tak' that flee sae braw, man,
Noo sidelings sooms at its life's close
  A worn an' wearied saumon.

Wi' ready gaff the callant stan's,
  The fish ashore to draw, man;
The fisher bids him haud his han's
  And no to hash his saumon.
"He's clean dune oot: gae grip the tail,
  Just whaur it tapers sma', man;
And lan' him up baith safe and hale—
  My sang! a bonnie saumon.

*Plump. †Then. ‡Taut. §A tug. ‖Fastened. ¶Whirring. **Turn. ††Wrestle.

FISHING AT HOME AND ABROAD

"Gae bid the lass set on the pat,
An' see it's no ower sma', man;
An' pit twa gowpens in o' saut*
To boil my bonnie saumon.
An' send for Jock an' Rab an' Tam—
They're fishers ane and a', man—
An' bid them come to me at hame,
An' eat my bonnie saumon."

The gentry get their cooks frae France,
Wi' mony a queer kickshaw, man;
But haith! I wadna tak' their chance
When I hae sic a saumon.
Wi' it, an' some o' Scotland's best,
A cheerer—maybe twa, man,
We'll gang like decent folks to rest
An' dream o' catchin' saumon.

Ance I was dinin' in the toun
Whaur a' thing is sae braw, man,
An' there I saw a Lunnon loon
Eat lobster sauce wi' saumon.
Wae's me that sic a slaister† should
Gang into mortal maw, man,
To fyle‡ the stamoch—spile the food—
An' siccan food as saumon!

Wi' flesh as pink as rose in June,
Wi' curd as white as snaw, man,
An' sappy broe§ they boil't him in—
Aye! *that's* what I call saumon.
To my best frien' I canna wish
That better should befa', man,
Than just to hae as guid a dish
As we hae wi' our saumon.

To Scotland's ilka honest son,
Her dochters fair and a', man;
To a' that lo'es the rod and gun
We'll drink wi' a hurrah, man.
May they frae mony sporting days
Baith health and pleasure draw, man;
May muircocks craw on a' the braes,
The rivers swarm wi' saumon!

*Two handfuls of salt. †A sloppy mess. ‡Defile. §Broth.

RESTING

PLATE XVII.

FISHING AT HOME AND ABROAD

"Gae bid the lass set on the pat,
An' see it's no ower sma', man;
An' pit twa gowpens in o' saut*
To boil my bonnie saumon.
An' send for Jock an' Rab an' Tam—
They're fishers ane and a', man—
An' bid them come to me at hame,
An' eat my bonnie saumon."

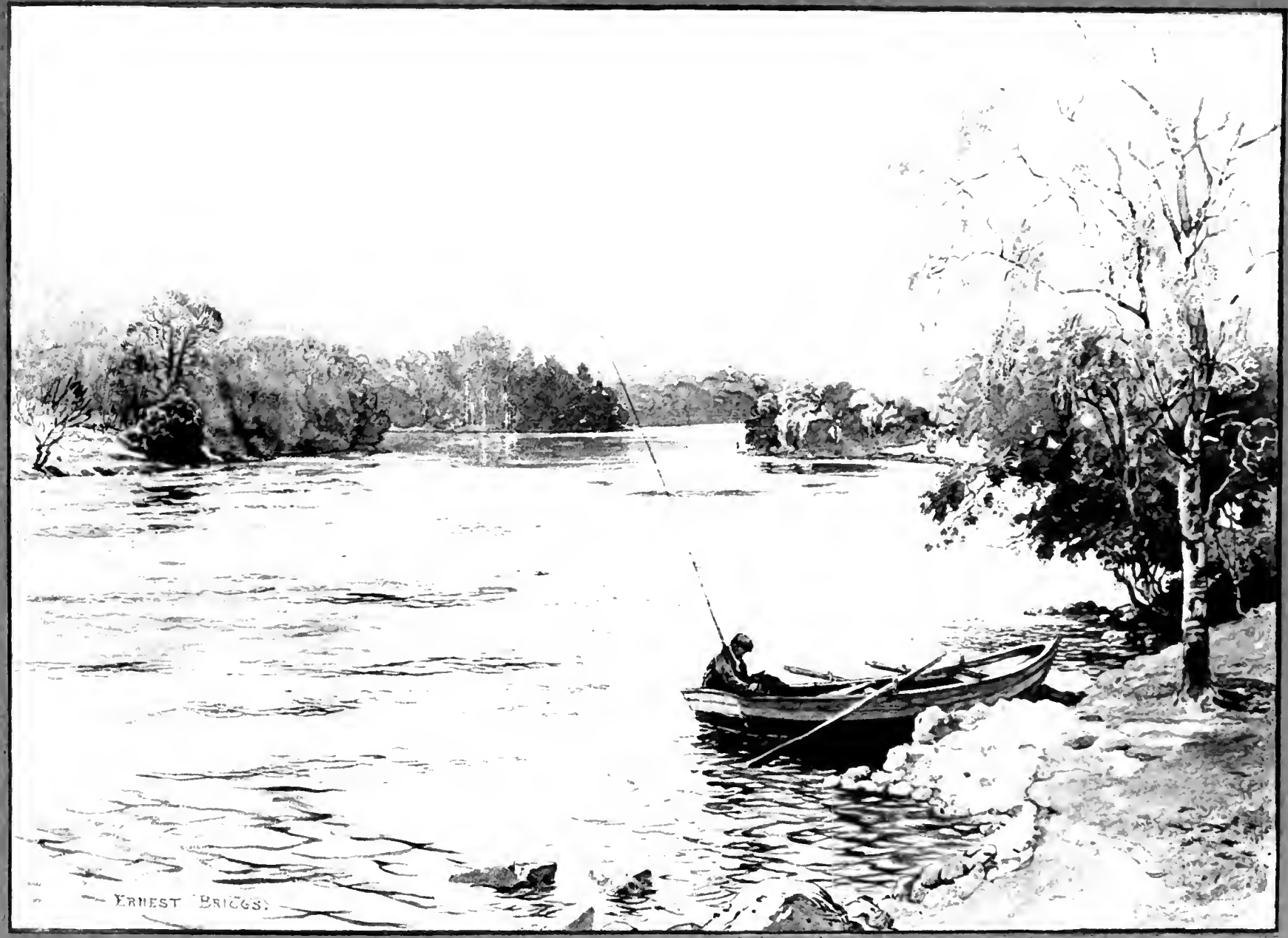
The gentry get their [illegible] France,
Wi' mony a [illegible], man;
But haith! I [illegible] chance
When I hae [illegible].
Wi' it, an' [illegible] Scotland's best,
A' cheerer—maybe twa, man,
We'll gang like decent folks to rest
An' dream o' catchin' saumon.

[illegible] dinta' in the town
[illegible] is tae draw, man,
[illegible] loon
[illegible] wi' saumon.
[illegible] slaister† should
[illegible] mortal maw, man,
To fyle the stamoch—spile the food—
An' [illegible] food as saumon!

Wi' flesh as pink as rose in June,
Wi' [illegible] as snaw, man.
[illegible]
[illegible]
[illegible]
[illegible] a dish
[illegible] saumon.

[illegible] Scotland's dka honest son,
[illegible] dochters fair and a', man;
To a' that lo'es the rod and gun
We'll drink wi' a hurrah, man.
[illegible] they frae mony sporting days
[illegible] health and pleasure draw, man;
[illegible] cocks craw on a' the braes,
[illegible] swarm wi' saumon!

* [illegible] † A dupey mess. ‡ Doble. § Broth.


ERNEST BRIGGS

"TYEE" FISHING AT CAMPBELL RIVER, BRITISH COLUMBIA

By NIGEL BOURKE

TO anglers who know British Columbia, Campbell River recalls memories of big salmon landed and bigger fish lost; to many others, however, it is only a name with which they would like to be better acquainted.

The tyee,* chinook, king or quinnat salmon (*Salmo* or *Onchorhynchus quinnta*), is known as the spring salmon, till he reaches thirty pounds or over. This fine fish occurs more or less in the rivers and tidal waters of Vancouver Island and the northern mainland of British Columbia. They are most commonly caught at Campbell River, principally because it is easily got at, and as a consequence most anglers go there to try and land a fifty or sixty pound fish.

Campbell River is situated on the east coast of Vancouver Island, about a hundred and ten nautical miles from Vancouver, and is reached by steamer from that town. Should one be the fortunate possessor of a small yacht or launch, rivers and inlets further north can be reached—Salmon and Nimkish Rivers for instance.

Further north, on the coast of the mainland the angler may hope for fish up to a hundred pounds. A yacht increases the pleasure of the journey enormously, even if the sportsman's time limit only allows him to go to Campbell River, as he can make up his own party. Further, a yacht can be anchored immediately on the fishing grounds, in the mouth of Campbell River, and the wearisome daily row from the hotel of a mile, perhaps against a strong tide, avoided.

The scenery is magnificent on the voyage from Vancouver. Mountains, their sides covered with many species of coniferous trees, rise sheer from the tidewater, except where the devastation caused by forest fires make unsightly scars. Snow-covered peaks raise their shining heads a few miles back from the shore and give a delicious sense of coolness even on the hottest day. The steamer threads its way through islands, big and small, and of all shapes and sizes, which are a never-ceasing source of interest to the newcomer, and recall past fishing and hunting trips to the old timer.

* "Tyee" is an Indian word signifying "great" or "chief."

In the far Northern waters, the "tyee" commences to run quite early in the year, but it is usually the first week in August before they appear in the neighbourhood of Campbell River and adjacent waters; then big fish may be seen jumping clean out of the water in twos and threes together. Most unfortunately they have the bad taste to prefer the spoon to the fly, indeed it is quite useless to try the fly on a fully-grown tyee. Occasionally small spring salmon of ten to fifteen pounds are caught with fly; but, even so, very rarely.

Most of the fishing in Campbell River is done in a comparatively restricted area. South of the mouth runs a long, low, shingly beach, on which an Indian reservation is situated. Along this beach, and two hundred yards from the shore, for about half a mile, some of the best fishing is to be had. North of the river the shore is thickly timbered with trees, many of them two hundred feet high. The boatmen seldom take one more than three-quarters of a mile in this direction; so it will be seen that the fishing is confined to about a mile and a half along the Vancouver Island shore. The salmon go up the river to spawn after waiting near the mouth for varying periods, and are never caught legitimately in the river itself.

The tackle generally used is a stout twelve or fourteen foot greenheart trolling rod, with two hundred yards or more of heavy "guttyhunk" line with a trace of wire or the strongest treble gut. However, any ordinary strong English salmon rod and tackle to correspond will serve. The spoons used are about six inches in length. The best killers are the copper and silver, all copper, all silver, and all brass. The wobbling brass spoon probably accounts for more fish than any other, the next best being the copper and silver; the Indians and white men fishing for the market hardly ever go beyond these two. It is a *sine qua non* with both the wobbler and ordinary spoon that they must be made to wobble and revolve as slowly as possible, for the tyee refuses to take any lure that spins quickly. Another most important detail is to keep one's lure highly polished; some anglers even take out some sort of metal polish so as to furbish up the spoons when they get tarnished by the sea-water. Two heavy weights are usually fixed on the line some way above the trace so as to prevent the spoon catching in the bottom as well as to sink it deep down.

It is a curious fact that the fish seen playing on the surface never seem to take any lure; I have several times taken off my weights and harled the spoon right through a school of fish jumping all round the boat, but

never with any success. The amount of line let out is comparatively small; not more, as a rule, than thirty yards at the outside. The spoon and line must be frequently examined as there are masses of scum floating with the tide, as growing kelp. The pull of the weeds is often mistaken for that of a fish, but the difference is gradually learnt, and the old hand seldom makes a mistake.

The old question as to whether a fish should be struck hard as soon as he is felt, or whether he should be allowed to strike himself is frequently debated; some days one method seems to answer best, some days the other. Horrible days occur when neither method seems of any use and fish after fish is felt and lost.

Local opinion favours the high tide coinciding with daybreak as the ideal state of affairs, the same combination in the evening being almost equally good, and at high and low water there is always hope. After the first hour of the ebb till just before low water, most anglers do not trouble to fish.

A typical day's fishing starts about five a.m. or thereabouts. The angler is roused by the boat's hand, and the fact that it is often very chilly at that hour does not add to his pleasure at being wakened so early. Dressing in warm clothes is a quick process and ablutions are left till the return for breakfast. The dinghy is brought alongside; having clambered down, the boatman rows you out over the shallows. While he does this, the spoons are given a final polish.

It is still very dark and we try an all-silver lure. Over it goes and about twenty-five yards of line are let out. First we row against the flood tide. Several other boats are about, mostly those of professional fishermen who are using handlines. Nothing happens for a quarter of an hour, and as we see a good fish landed in one of the other boats, and it is growing lighter, we substitute a copper and silver spoon. A gentle pull is felt, weeds probably; we pull in and find a mass of kelp round the weights. Tearing them off, we now try with the tide, and hope the best hour of the day is not going to be a blank.

Fish are moving in schools here and there, but these are not feeding fish. Just as the sun rises, the rod is jerked out of its place and the reel whirls round, the angler snatches it up while the boatman reels the other up and places it out of harm's way. The fish, after taking out some sixty yards, comes back, the line is reeled up in frantic haste, while the boatman prays his gods that the hold is good. Luck is with you, and the fish is felt

again; he flashes past you quite close and, having seen the boat, makes a terrific rush along the top of the water. Meanwhile the boatman rows after him so as to avoid disaster if the fish should make a very long run. However, after taking out perhaps a hundred yards, he goes to the bottom and sulks, trying those horrible jigging tactics which all fishermen know and fear. By dint of arduous labour you have got back a good deal of your line. Suddenly you see a gleam far below. Now is the moment to take great care. As yet he is far from being exhausted and, as soon as he is near the surface, another rush is certain. He may sulk again or run along the surface, and end by jumping clean out of the water, four feet and a half of shining silver. Gradually he becomes exhausted and more amenable. All going well, your boatman will soon be able to get out the long-handled gaff, which weapon is much better than the short one usually sold in British Columbia, and, waiting his opportunity, bury it in the fish's side and drag him into the boat.

Having killed the fish with a club—the "priest"—you can rest your arms, which will assuredly be aching from the effort to keep the point of the rod a decent height from the water. After exchanging mutual congratulations with the boatman, you try to estimate the weight of your fish, on which subject your gillie is sure to be pessimistic—and usually right.

Now try again, perhaps to have another glorious quarter of an hour, perhaps, misery of miseries, to have the hook come away just as the fish is beaten and your boatman is thinking of the gaff. This happened to me a year or two ago, three times in succession in twenty-four hours, all, needless to say, being big fish. Even now it is a ghastly memory.

At about half-past seven or eight, the tide being on the ebb, you row home to your yacht, wash, and have breakfast. After that, a pipe and a snooze. At low tide, which on this particular day would be about eleven or twelve, you sally forth again, not expecting much luck, and probably being justified. All the afternoon the tide floods too strongly for fishing. Perhaps if energetic enough you try up the river for trout; if lazy, sleep or yarn. About five, the tide slackens, and you troll till after dusk. A big fish, hooked as it is getting dark, gives the sportsman a lively time, and the tyee has all the best of the odds. Supper at nine, and, after a pipe, you are glad to tumble into bed and dream of the monster fish you lost. Days and luck vary, of course, but the foregoing is a fair sample.

Coho salmon and an occasional spring will be caught also when fishing

for tyee. Coho salmon are met with practically anywhere up and down the coast, at the right season of the year. They vary in size from three to ten pounds. With light tackle they give great sport, and they take all kinds of spoons freely, preferring one that spins quickly, the wires used being much smaller than those with which tyee are caught. In my own opinion, the most important factors of success in both tyee and coho fishing is that your spoon shall spin slowly and truly as well as being well polished. Another point to be marked is not to let your boatman row too quickly.

The British Columbian Government, a few years ago, introduced Atlantic salmon, and a few have been caught on the fly: it will be most interesting to see whether they attain large weights. At any rate, I trust they will have better luck than the Atlantic lobsters which were turned out a few years back, with their claws still tied up, and, thus handicapped, did not establish themselves!

Trolling is always dull work unless plenty of fish are caught. A tyee, however, when hooked, is well worth the trouble you have bestowed upon him. There is also an undoubted satisfaction in landing a sixty-pound fish; if these salmon would only take a fly, it would be a fisherman's idea of Paradise. I shall only add that I hope that any British anglers going out there to try their luck will be as fortunate as I have been.

SEA-TROUT FISHING

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

SEA-TROUT, in their different varieties, occupy an intermediate position, both in ichthyology and in sport, between the salmon and the freshwater-trout. Dr Günther distinguished four distinct species of migratory trout in British waters, namely, *Salmo trutta*, the true salmon-trout; *S. cambricus*, the sewin of Welsh rivers, also found in English and Irish waters; *S. brachypoma*, which is the sea-trout of the Tweed and the bull-trout of the Forth; and *S. gallivensis*, an estuarine form from the west of Ireland. Most naturalists agree now with Mr Boulenger in regarding all these forms as racial varieties of a single true species—*Salmo trutta*. Scandinavian ichthyologists have simplified the classification still further by pronouncing Atlantic-salmon, sea-trout and freshwater-trout in all their forms to be no more than varieties, more or less permanent, of a single species. This view receives support from the behaviour of English brook-trout introduced into the rivers of New Zealand, where they have grown to enormous weight and have acquired the seagoing habit together with the lustrous silver uniform of true salmon.

The classification of our migratory *Salmonidæ* remains a difficult problem for ichthyologists, so constant is the tendency of the different races of this very plastic clan to merge into each other. For British anglers, however, it resolves itself into an easy, if unscientific, arrangement in three main classes—salmon, sea-trout and bull-trout. The last-named, formerly classed as *Salmo eriox* and later as *S. cambricus*, may be held, though tentatively, to include the bull-trout of English, Irish and Scottish rivers, the Tweed excepted, for in that fair stream what men call bull-trout elsewhere are known as sea-trout, and the fish usually recognized as sea-trout or salmon-trout are termed whitlings. A variety known in the Tay as "salmon bull-trout" grows to great weights. Mr Malloch once sent me a photograph of one weighing 42 lb. He considers these fish to be true salmon (*S. salar*) whereof the appearance has been altered by the process of spawning.* Their distinctive marks consist of a

* "All the grilse kelts, small spring-fish kelts, and, in fact, all the kelts which we marked, were so-called bull-trout when they returned again. I have watched them carefully in our fish-house, and in July, 1907, there were 19 per cent of them." (Malloch's *Salmon, Sea-trout, etc.*, p. 155.)

SEA TROUT FISHING—RIVER

PLATE XVIII.

SEA-TROUT FISHING

[illegible] HON. SIR HERBERT MAXWELL, BART.

SEA-TROUT, in their different varieties, occupy an intermediate position, both in ichthyology and in sport, between the salmon and the freshwater-trout. Dr Günther distinguished four distinct species of migratory trout in British waters, namely, *Salmo trutta*, the true salmon-trout; *S. [illegible]*, the sewin of Welsh rivers, also found in English and Irish waters; *S. brachypoma*, which is the sea-trout of the Tweed and the bull-trout of the Forth; and *S. galiciensis*, an estuarine form from the west of Ireland. Most naturalists agree now with Mr Pomenger in regarding all these forms as racial varieties of a single [illegible] species—*Salmo trutta*. Scandinavian ichthyologists have [illegible] the classification still further by pronouncing [illegible] salmon, [illegible] and freshwater-trout in all their forms to be [illegible] less permanent, of a single species. [illegible] the behaviour of English brook-trout [illegible] New Zealand, where they have grown to [illegible] the [illegible] habit together with the [illegible]

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[illegible] all the [illegible] which are marked, were so-called bull- [illegible] in our fish-house [illegible] in July, 1907, there were 17 [illegible]

ERNEST BRIGGS.

greater number of spots on the operculum and shoulder than a normal clean salmon bears, the presence of maggots in the gills (suggesting an estuarine habit) and pale, flavourless flesh. They are quite distinct from the sea-trout of the Tweed and the bull-trout of other rivers, and although Mr Calderwood reports having recognized fish similar to the Tay "salmon-bull-trout" in the Ness, Helmsdale and Dee, I consider that it would be a great mistake to believe that all salmon after spawning assume the characteristics of this variety.

The sea-trout *par excellence* (*Salmo trutta*), whether it be called salmon-trout, as some do use, or white-trout as in Ireland, or whitling as in the Tweed, is probably—weight for weight—the most sporting fish in the British Isles; to offer it any bait except the artificial fly is—if not a crime—certainly a misdemeanour. To enjoy the sport in perfection, it should be sought in streams of such dimensions as may be effectively fished with a light rod—from nine to twelve feet long. Half the pleasure is forfeited if a more powerful rod, with correspondingly heavy line, has to be used, for although sea-trout of 5 or 6 lb. are not uncommon, such weights are exceptional, the majority will range from 1 to 3 lb. in June and July; later in the season the average will be reduced by the run of herlings—corresponding to the grilse stage in salmon—which weigh from half a pound to a pound.* Nevertheless, though the rod and tackle be light, the reel should hold not less than 100 yards of line, for a 6 lb. sea-trout in a Highland torrent makes a wild fight for freedom; besides which, there is always the chance of hooking a heavy salmon. My first salmon was hooked on a small fly with which I was fishing for sea-trout; and a difficult job I had to land him, being young and equally devoid of experience, gaff and landing net. Seventeen pounds was the weight of my prize, fresh from the sea, and the human heart can scarcely be capable of more intense emotion than filled mine as I gazed upon the glittering prize laid out upon the shingle.

Most of our large salmon rivers contain sea-trout, and when these are content to remain in the principal channel a rod of fifteen feet or so is necessary to cover the places where they lie. But as a rule these fish turn aside from the main channel into some tributary where an ordinary trout-rod is all that is required. Good sea-trout-fishing is far more difficult to obtain in the United Kingdom than salmon-fishing. To secure a beat on a first-

*The true sea-trout is occasionally taken in nets of far heavier weights. In Fig. 8 is a photograph by Mr Malloch of one weighing 18 lb. taken with the rod in the Tay in June, 1902; but such fish seldom rise to the fly.

class salmon river is merely a question of what one is prepared to pay—a serious obstacle, indeed, to many an honest angler, for salmon-fishing is essentially an exclusive recreation and the rents demanded and readily obtained for waters of renown have risen to figures which would have been deemed incredible by a former generation.

Expense, however, is not the only difficulty in the path of him who would have good sea-trout fishing. There are but few places to which he can repair and calculate on a few days' or weeks' sport without the formality of a lease, and such places are remote. Ballinahinch in Galway is one of these, where, in a chain of lakes connected with the sea by a short river, excellent sport may be expected by visitors staying in the hotels at Recess and elsewhere in the district. More difficult of access, but far more attractive than such semi-public assemblies of anglers, are the countless streams of Ireland and Scotland, chiefly on the western and northern coasts and among the islands, many of which dwindle to mere rills in time of drought, but in which the lucky fellow who happens to be on the spot when they are flooded is pretty sure of fast and exciting sport.* The main difficulty is to hit off the right nick of time, for such streams fall as rapidly as they rise; moreover, it is often not easy to find accommodation. Lodging, at best, may perhaps only be had in a shepherd's cottage, and even that may be several moorland miles from the fishing.

One such stream as this comes to mind, flowing through a deer forest and falling into the head of a winding fjord or sea inlet in the West Highlands. There is no human habitation within ten miles of its banks; the solitude is profound; the silence broken only by the hoarse cry of the golden eagle on the hillside, the gabble of the grouse-cock, the wailing love-note of the curlew, the grunting croak of the raven and the clamour of gulls on the tide. Here is a river which would be well worth much pains to reach during a summer spate, for it draws a multitude of sea-trout and a fair number of salmon, which, when the flood subsides, congregate in a few deep, rocky pools. Yet in fact, I suppose, no fly is cast upon this charming stream more than once in five years; so, whereas the crofters in a neighbouring strath are wont to raid the pools, the proprietor draws a net there once in every season. I was present on one such occasion. He took us up the fjord in his yacht; we netted two pools and returned

*On October 21, 1870, there was a tremendous flood in the Luce, a river of Galloway, which did much destruction, sweeping away a large number of sheep. Yet when I arrived by train from Edinburgh at 4.30 p.m. the waters had subsided so quickly that I was able to kill with the fly a salmon of 16 lb. before 5.30, when it was dark.

with seven salmon weighing from 12 lb. downwards and 207 sea-trout from 5 lb. downwards. It was a tantalizing sight to one who reflected what sport these lovely fish might have afforded had there but been a spate at the right time. We had to find consolation in the satisfaction of many humble householders when these excellent fish were distributed in the clachan near my friend's shooting lodge.

Even in a stream dead low, with a mere trickle connecting the pools, sea-trout may be taken with the fly at night, which is certainly more in accord with the spirit of sport than netting them out; but which, as Izaak Walton truly wrote of night-fishing, "is void of the pleasures that such days as these, that we two now enjoy, afford the angler." It certainly lacks much of the charm of daylight-fishing, chiefly because of the difficulty of seeing the rise. That is also the cause why, in night-fishing, so many fish are pricked and missed. The flashing rise of a sea-trout differs entirely from the slower movement and poise of a salmon. If you strike on the rise of a salmon, you are certain to miss him; whereas you are nearly as sure to miss a sea-trout if you don't strike on the rise. Stronger tackle is required in night-fishing than is advisable by day, for a fish so hooked runs very wild and must be held tighter in the dark than when its movements can be anticipated and controlled in daylight. It is a common, but groundless, belief that white flies are more attractive than others in the dark. Dark ones are just as visible as light ones under the stars. It is no use attempting night-fishing in low water until fully an hour after sunset; twilight will not do; the last radiance should have left the sky before the water is disturbed.

It is remarkable, seeing how readily sea-trout take the fly after dark, that salmon will not be induced to do so also. Although I have often fished, and known others to fish, by night in pools where numbers of salmon were lying, only one instance has come to my knowledge of a salmon having been hooked and landed after dark.

Many, perhaps most, of the streams most prolific in sea-trout run out of a loch, where these game fish give fine sport with the fly. But such lochs might be turned to advantage in a manner that has been very seldom adopted hitherto, whereby sea-trout fishing might be developed to almost any extent at a very moderate expense, namely, by storing the water and regulating the flow so as to have the stream in fishing order whenever it is desired. Many of us must have realized the burden of the plaint uttered by the late Mr Bidder, K.C., who, after encountering repeated

disappointment through the caprice of the British climate, wrote these lines in the visitors' book of an hotel where he had wasted a good deal of his holidays waiting in vain for a spate:

> Sometimes too early and sometimes too late,
> Sometimes too little and sometimes in spate;
> Sometimes too windy and sometimes too calm,
> Sometimes too frosty and sometimes too warm;
> Sometimes too drumly and sometimes too clear—
> There's aye *something* wanting when I'm fishing here.

Wind and temperature may be reckoned as being independent of human control; but command of a hill loch, situated in waste land of merely nominal value, puts it in one's power to create an artificial spate at pleasure. The first person to turn such capabilities to account was Mr Naylor and two friends, who, in 1888, during a period of great drought, dammed the outlet of Loch Langabhat in the Island of Lewis. There were thousands of salmon and sea-trout waiting in the bay for a chance of ascending the river Grimersta, which had shrunk to impracticable proportions. On August 21 he released the water which had been stored by the dam, thereby creating a spate in the little river. Salmon and sea-trout swarmed into it immediately. In six days before the end of the month these three gentlemen landed 333 salmon weighing 2,026 lb. and 71 sea-trout weighing 52 lb. In nineteen days' fishing Mr Naylor killed 214 salmon weighing 1,307 lb. and 304 sea-trout weighing 161 lb. His heaviest bag was on August 28, where in nine hours' fishing he landed 54 salmon, and left off an hour and a half before dark because, as he himself confessed, he was "tired of slaughter." So would most of us have been, I fancy; salmon-fishing would part with its principal charm, which is inseparable from its uncertainty, if it were reduced to the mechanical process of hauling out a fish every ten minutes in a long day. The exploits of Mr Naylor and his friends are here referred to, not from any admiration for record-breaking—far from it—but as proof of the extent to which natural waters may be rendered productive of sport by artificial appliances.

It is to be observed that the average weight of these Grimersta sea-trout was little over ¾ lb. That low standard was owing to the angling having taken place in the month of August, when the great run of herlings or finnocks (sea-trout in the grilse stage) takes place. Had it been a month or six weeks earlier in the season, when the large sea-trout chiefly run, the result would have been very different—larger fish and fewer of them.

SEA TROUT FISHING—LOCH

PLATE XIX.

[illegible] ABROAD

[illegible] of the British climate, [illegible] he had wanted a good [illegible]

[illegible] too late
[illegible] in spate;
[illegible] too calm,
[illegible] too warm,
[illegible] too clear—
[illegible] for fishing here.

[illegible] being independent of [illegible] situated in waste land of [illegible] to create an artificial spate at [illegible] capabilities to account was Mr [illegible] during a period of great drought [illegible] in the Island of Lewis. There [illegible] waiting in the bay for a chance [illegible] which had shrunk to impracticable [illegible] the water which had been stored [illegible] in the little river. Salmon and [illegible] In six days before the end of [illegible] 335 salmon weighing 2,026 lb. and [illegible] nineteen days' fishing Mr Naylor killed [illegible] and 304 sea-trout weighing 161 lb. [illegible] where in nine hours' fishing he landed [illegible] and a half before dark because, as he [illegible] of slaughter." So would most of us have been [illegible] part with its principal charm, which [illegible] were reduced to the mechanical [illegible] minutes in a long day. The exploits of [illegible] referred to, not from any admiration [illegible] but as proof of the extent to which natural [illegible] productive of sport by artificial appliances.

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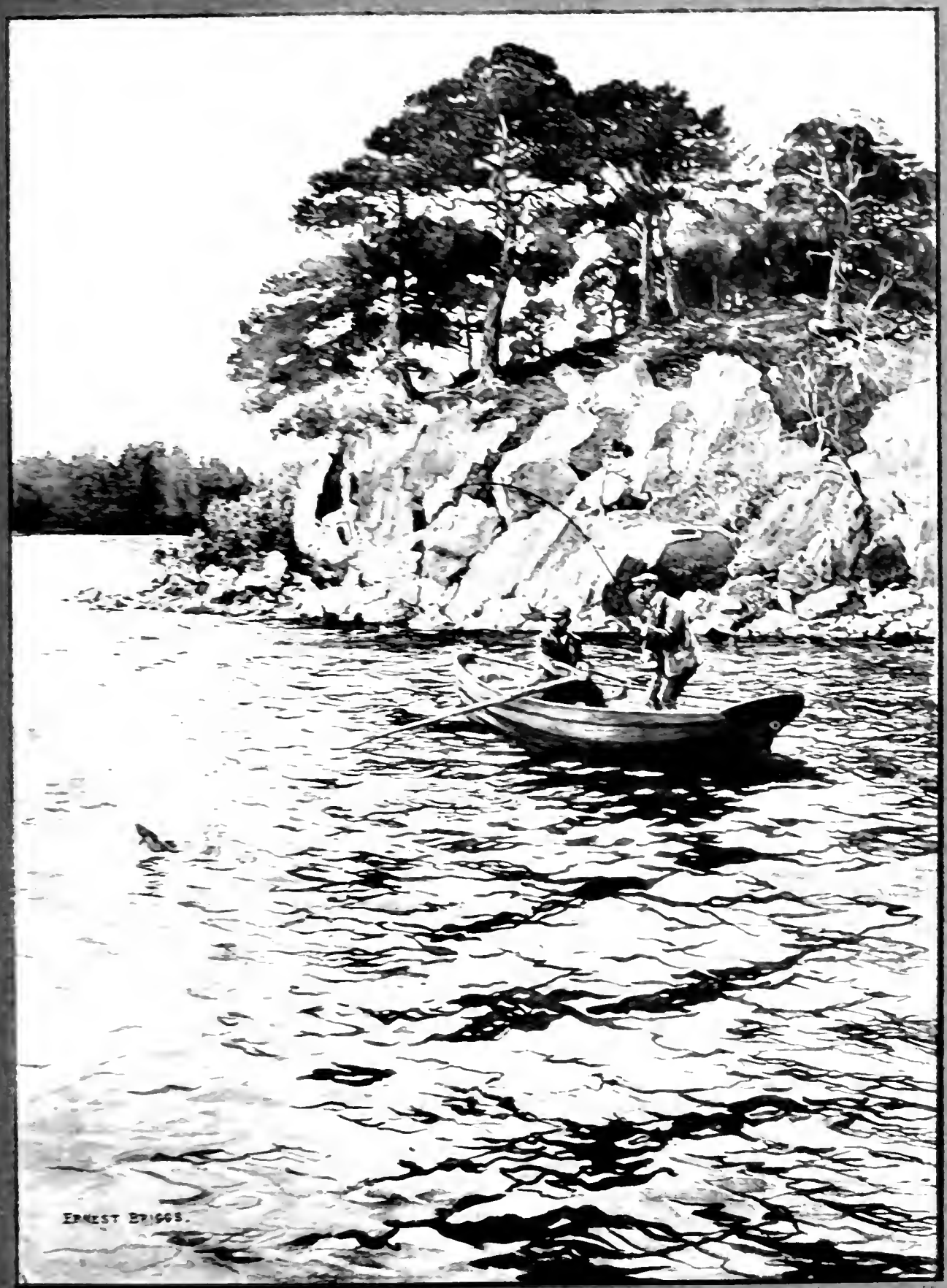

ERNEST BRIGGS.

The present writer, strolling one day through the grounds of a millionaire, who had replaced a modest old Scottish mansion with a palace of exceeding splendour, came upon a gang of men working for a London contractor who had undertaken to lay out a large rock garden, without which no wealthy gentleman's establishment is now considered complete. Grand and costly as was the scale of the design, there seemed to me to be something puerile in the attempt to mimic with slabs of stone and buckets of cement the haphazard confusion of nature, for this park is situated amid some of the most romantic scenery in North Britain—amid soaring peaks, sweeping rivers and churning tides. It so happened that, although there were a thousand dripping crags and a hundred thunderous linns within a few miles of this garden, there was no water available on the spot, and a supply had to be brought from a distance at considerable expense in order to create a cascade for the rock garden. When I remarked to the young clerk of the works that he must have found some difficulty in this respect, he remarked proudly—"You would be surprised, sir, what a wonderful effect our firm can produce with a one-inch pipe!"

Even so, it is wonderful what improvement can be wrought upon the angling capabilities of small rivers through the judicious expenditure of moderate capital. In water storage lies the secret of the regeneration of depleted fisheries and the creation of new ones, whether for salmon on a large scale or sea-trout on a smaller one. The ideal in this matter is the storage of such a mass of water as will serve to maintain an even flow in the river throughout the summer droughts, thereby affording easy access to the fish and protecting them from the dangers inseparable from hanging about on the coast and in the estuary waiting for a flood and exposed to decimation by nets and natural enemies. Among the latter, seals and porpoises are the most relentless raiders, but even their depredations might not seriously diminish the shoals, which suffer chiefly from the perfection to which mechanical means of capture have been brought.

In estimating the extent to which any river has been depleted of salmon by the action of nets, one has always to take account of the tendency of old fishermen to extol the doings of their youth and to compare the present unfavourably with the past. *Horas non numerant nisi serenas*: overlooking the lean years, their memories retain the impression of seasons when salmon swarmed in every pool. Nevertheless, there can be no doubt whatever

that all the small salmon rivers of Scotland have been too severely netted, except in those cases where proprietors have adopted measures to allow of a fair proportion of spawners to reach the upper waters.

I have before me as I write the returns of the angling syndicate which rented the Thurso for nearly fifty years, whence it appears clearly that the fishery steadily deteriorated from the time that bag nets were first set to work at Scrabster and elsewhere on the coast. Thus in 1863 seven rods accounted for 1,510 fish weighing 14,666½ lb.; while in 1887—the last year included in the return—eight rods killed only 302 fish. So seriously had the prospect of sport fallen off that about the close of the century when their lease terminated the lessees made no attempt to have it renewed.

The most signal example of success in developing the angling resources of a salmon river is that of the Helmsdale. Naturally far inferior in volume to many other waters flowing into the Moray Firth, it has no superior in attraction for the fly-fisher. In a course of twenty miles through Strath Ullie it presents a series of pools and rapid streams fulfilling the salmon-angler's ideal. Always renowned for the excellence of its spring-fishing, it was of little account during the summer months, for, so soon as the snow disappeared from the uplands of Caithness and the lochs had discharged the accumulation of winter floods, the river dwindled to insignificance, and salmon collected near the mouth, being unable to ascend, were netted out in thousands.

The shooting and angling of the strath were let on long leases to six tenants of the Duke of Sutherland, who became concerned on account of the serious depletion of the stock of salmon in the river consequent on the erection of bag nets along the coast towards Brora mouth in the year 1896. Previously to that year the only netting was done by net and coble in the lower pools; and this, productive as it was, allowed plenty of fish to run through in spring when the water was high. These nets did most execution in summer when, as aforesaid, angling was impracticable owing to want of water. But bag nets act independently of the state of the river, and it soon became apparent that the run of spring fish was to be seriously affected, if not destroyed, by the action of these automatic engines. In 1895 the net and coble took 4,619 salmon and grilse and the rods about 1,600 ; next year the bag nets were set up with the result that in 1899 they captured 8,658 salmon and grilse against 342 taken by net and coble and 307 by rods. Clearly, action of a vigorous kind was necessary if the

Helmsdale was to retain its reputation as an angling river. The tenants began by buying up the lease of the bag nets and of the net and coble, so that not a net was worked after the close of the season 1899. This told immediately upon the rod fishing, which accounted for 837 salmon and grilse in 1900 against 307 in 1899; but the summer fishing was still of no account owing to want of water, and it was decided to attempt to improve it by impounding the head waters of the river by damming up the lochs near its source and regulating the summer flow so as to admit free passage for fish throughout the season.

Accordingly in 1901 a dam dyke was completed at the outlet of Badanloch raising the water-level by six feet. This inundated a good deal of worthless land and increased the area of the loch to six square miles. To prevent the stored water being prematurely wasted in creating temporary spates for the convenience of individuals, it was agreed that the Badanloch sluices should never be raised before June 1 in any year; but for the creation of such temporary spates as might be desired to relieve drought in the spring months, another dam was thrown across the outlet of Loch-an-Ruathair. The cost of the whole of the work was considerably less than £2,000, and the result has been to double the amount of angling; for, whereas there used to be practically no fishing between the middle or end of May and the autumn floods, the river now runs in fishing trim throughout the summer. Further, the lower half of the river, between Kildonan and the sea, used to cease to be worth attention after the spring fishing was over; it was only in the upper half of the river, from Kildonan up to Badanloch, that any sport could be expected late in the season.* Consequently, instead of 307 salmon taken by anglers in 1899, the annual average number from 1903 to 1907 was 1,217, since which the total bag for the season has sometimes exceeded 2,000 fish taken with the fly, all bait-fishing being strictly prohibited by the rules of the association.

Of course it is difficult to distinguish between the direct effect of taking off the nets and securing an ample and continuous flow of water. Both were causes contributing to regenerate the fishing. But it is clear that, no matter how large was the stock of fish near the river mouth in summer, they were of no use to anglers during the normal drought and low water between May and autumn. It is the storage of water and regulation of the

*The open season for rod-fishing on the Helmsdale ends on October 1, but hy a self-denying ordinance angling ceases on Septemher 15.

flow that have caused the Helmsdale, which was always a splendid spring river, to become an excellent summer one also. As I consider this system of water storage to be of the utmost importance in schemes for improving the fishing in small rivers, I append tables showing the returns of the various modes of taking salmon in the Helmsdale district during thirty-three years:

Year.	Net and Coble.	Bag Nets.	Rod Fishing.	Remarks.
1864	1,608	—	—	
1865	1,099	—	—	
1866	1,549	—	—	
1867	2,179	—	—	
1868	1,047	—	—	
1869	1,030	—	—	
1870	1,822	—	—	
1871	3,813	—	—	
1872	1,577	—	—	
1873	3,313	—	—	
1874	1,891	—	—	
1875	1,694	—	—	
1876	4,733	—	—	
1877	2,904	—	—	
1878	1,472	—	—	
1879	616	—	—	
1880	779	—	—	
1881	2,878	—	—	
1882	2,935	—	—	
1883	4,693	—	—	
1884	3,824	—	—	
1885	4,644	—	—	
1886	4,535	—	—	
1887	3,314	—	—	
1888	3,119	—	—	
1889	1,460	—	—	
1890	1,863	—	—	
1891	3,488	—	—	
1892	2,627	—	—	
1893	2,578	—	About 600	
1894	2,212	—	About 500	
1895	4,619	—	About 1,600	
1896	1,716	3,688	About 1,650	Bag nets commenced on the coast.
1897	820	7,570	507	
1898	348	4,454	667	
1899	342	8,658	307	
1900	—	—	837	Bag nets and coble nets removed.
1901	—	—	752	Bandanloch Dam finished.
1902	—	—	540	
1903	—	—	1,138	
1904	—	—	999	
1905	—	—	1,325	
1906	—	—	1,304	
1907	—	—	1,321	

Having regard to the ever-increasing demand for decent fishing, the importance of accessible means of recreation to a hard-working community, and, not least important, the expediency of preventing high-class angling continuing to be the exclusive privilege of rich men and their friends—having regard, I say, to these considerations, it is much to be desired that means should be adopted to develop the angling resources of these islands. Wealthy proprietors of suitable waters have it in their power to do it for themselves; if they have no taste for angling, their neighbours or others will not prove unwilling to indemnify them for the expense by paying for the privilege of fishing where there is reasonable certainty of sport. In the case of landowners whose circumstances admit of no expenditure beyond the necessary outlay on maintenance and management (a class which the new system of taxation will shortly cause either to preponderate or disappear altogether), angling clubs may be organized capable of moderate enterprise for the improvement of the natural waters of a neighbourhood and to check poaching. One thing is certain, namely, that unless some measures are adopted to meet the aspirations of honest anglers of humble means, the agitation for free fishing will gather strength; and free fishing means futile fishing for everybody; for if all waters were thrown open to the general public, it would cease to be the interest of any individual to protect the fishery.

Having undertaken to discourse about sea-trout fishing in this chapter, I have travelled rather far from that theme; but, in fact, the conditions essential to a good stock of sea-trout are inseparable from those affecting salmon. The means, mechanical or structural, to improve a salmon fishery are similar in kind, though smaller in scale and less formidable in expense, to those applicable to a sea-trout fishery, and can be adopted with advantage in many streams which have no pretension to be reckoned salmon-rivers.

But to return to sea-trout fishing. It is singular that so bold a creature as the sea-trout—so alert in its movements, so predacious in its habits—can seldom be induced to rise a second time after missing the fly. I had almost, instead of "seldom," written "never," for that would be in accord with my own experience, which has been confined in the matter of sea-trout fishing to streams and lochs on the mainland of Scotland, where salmon and common trout are not usually daunted by missing at the first, second or third offer, provided nothing happens to arouse

their suspicion. I have heard, however, from other fishermen that in the waters of the Western and Orkney Islands sea-trout do not show this peculiarity, but come again and again.

There are many conventional, and not a few unconventional, patterns of sea-trout flies, nor have I been able to distinguish any preference shown by the fish for one colour more than another. Most people would be content if they could number to their credit as many sea-trout as Mr H. C. Pennell has creeled. He is no believer in variety, having reduced his repertory to three or four wingless patterns, dressed with silk bodies and with black or red cock's hackles wound round the head. But among the points of difference between salmon and sea-trout there is this, that whereas the salmon does not deign to feed, in the sense of taking nourishment, while in the fresh water, sea-trout do so freely, rising at natural flies as greedily, though not so regularly, as do common trout.* Nevertheless, it profiteth little to waste time in matching the natural fly with the artificial, for sea-trout do not show any discrimination, seizing, when on the move, any life-like object of suitable size and motion.

Those of less austere taste than Mr Pennell will scarcely be satisfied to limit their selection to his patterns, and, seeing how largely imagination contributes its charm to angling, they may choose to fill their books or boxes with miniature copies of any salmon-flies that may hit their fancy, or with enlarged versions of the flies used in fishing for brook-trout. He who has leisure and skill enough to dress his own flies (and nobody who has not done so can understand what a zest this adds to fly-fishing) may begin with the following recipes, the first three being variations of the late Francis Francis's favourite pattern.

1. *Tail*, a tuft of orange floss; *body*, cinnamon-coloured mohair, ribbed with fine silver twist, finished at the shoulder with a coch-y-bondhu hackle (that is, the red cock's hackle with a black list down the middle); *wing*, two strips of teal.

2. The same, except that the body is half scarlet, half black mohair.

3. The same, except that the body is in three equal compartments of yellow, scarlet and black mohair.

4. *Tail*, a small topping; *body*, lemon-yellow mohair ribbed with gold twist, a ginger cock's hackle at shoulder; *wing*, two gold-pheasant tippét feathers, with strips of pintail over.

*The fact of salmon rising at the natural March brown has been reported by several competent witnesses; but although I have often seen water containing many salmon thickly sprinkled with freshly-risen March browns, I have never seen a salmon take one.

Photo by] [P. D. Malloch.

LOCH LEVEN TROUT.

3 years 4 months old 1lb.
4 years 4 months old 2lb.
2 years 4 months old ½lb.

5. "Polly Perkins," a Welsh sewin pattern. *Tag*, gold twist; *tail*, tippet fibres; *body*, bronze peacock herl, with coch-y-bondhu hackle at shoulder; *wing*, mottled fawn and brown peacock (the feather on the wing coverts) with small blue chatterer on the cheeks.

6. An Irish pattern. *Tag*, silver twist and light orange floss; *tail*, a small topping and blue chatterer; *body*, light blue mohair, with bright blue hackle at shoulder; *wing*, a couple of the jay's blue-barred feathers.

7. "The Harlequin." *Tail*, a whisk of teal; *body*, half orange and half apple-green floss, ribbed with silver wire, finished at shoulder with a black cock's hackle; *wing*, slices of starling's wing feather. I believe this is the invention of that most successful angler, Mr Ashley Dodd.

Whether these or other simulacra of the unknown be employed, the prudent fisher will bring with him his own flies, tied on hooks and gut of trustworthy temper and toughness. The movements of a sea-trout when hooked are so rapid, its behaviour so violent, that the quality of the tackle is sure to be tested to the utmost. If you would avoid chagrin and the temptation to employ regrettable language, avoid also the tackle which one often sees exposed in the village ironmonger's or chemist's window in country towns. In such a position it is exposed to that which quickly destroys the texture of even the best of gut, namely sunshine, and the hooks are probably of cheap, and therefore treacherous, manufacture. It cannot be too constantly carried in mind by the sea-trout fisher that, if he would escape disappointment, every article in his equipment must be of faultless quality.

This is a convenient occasion for a word or two on the methods of weighing fish. Methods! quoth I—there is but one method entirely trustworthy, namely, that practised by every honest grocer and tobacconist—the scales or steelyard. But the steelyard may be mislaid or left at home; it may even happen to the fortunate angler to land a fish of greater weight than his steelyard can record. It did so happen to Colonel Thornton, who landed an enormous pike in Loch Alvie, "measuring from eye to fork five feet four inches."* "The weight of this fish," adds the Colonel, "judging by the trones we had with us, which only weigh twenty-nine pounds, made us, according to our best opinions, estimate him at between forty-seven and forty-eight pounds."† In such a case one may arrive within a

*Colonel Thornton's *Sporting Tour in the Highlands* (in 1786), chapter v.

†This estimate tallies pretty closely with the authentic record of the proportion of weight to length in the pike taken in Lough Romer, co. Cavan, in 1876, which measured 4 ft. 6½ in. long, 25 in. in girth, and weighed 37¾ lb.—See the *Field*, May 30, 1896.

few ounces of the correct weight of a large fish by means of the following scale prepared by Mr Edward Sturdy and published in the "Fishing Gazette," the editor of which, Mr R. B. Marston, has kindly allowed me to reproduce it here:

WEIGHTS OF SALMON OR TROUT FOR INCHES OF LENGTH, BASED ON THE SUPPOSITION THAT A SALMON OF 36 INCHES WEIGHS 20 LB., AND A TROUT OF 18 INCHES WEIGHS 2½ LB.

SALMON.

In.	lb.	In.	lb.	In.	lb.
30	11·574	39	25·428	48	47·407
31	12·770	40	27·435	49	50·432
32	14·046	41	29·544	50	53·584
33	15·404	42	31·759	51	56·864
34	16·848	43	34·082	52	60·274
35	18·379	44	36·516	53	63·819
36	20	45	39·063	54	67·500
37	21·713	46	41·725	55	71·320
38	23·522	47	44·506		

TROUT.

In.	lb.	oz.	In.	lb.	oz.	In.	lb.	oz.
9	0	5	17	2	2	24	5	15
10	0	7	18	2	8	25	6	11
11	0	9	19	2	15	26	7	8
12	0	12	20	3	7	27	8	7
13	0	15	21	4	0	28	9	6
14	1	3	22	4	9	29	10	7
15	1	7	23	5	3	30	11	9
16	1	12						

N.B.—The measurements must be made from end of snout to the end of the middle rays of the tail fin. A fish should not, in season, vary more than 15 per cent below the scale if not in very good condition—to more than 15 per cent above the scale if exceptionally well fed. The great majority of fish in good condition and of normal shape will be very near the weights given.

One often hears anglers making exaggerated allowance for loss of weight in a fish which is not brought to the scales for some hours after it is taken from the water, so much being reckoned to have been lost

by drying and something more by bleeding. Believe it or not: a five-and-twenty pound salmon will not lose more than an ounce of blood, seldom as much, and as for drying——!

I was grievously disappointed once when I brought a fine salmon home from the Willow Bush of Mertoun, on Tweedside. My old friend Goodfellow, patron boatman of that beat, weighing it on his scale, exclaimed, "Weil dune, mister! it's thirty pund and a wee bit to spare." Alas! when submitted to the dispassionate test of my host's scales at Newton Don, the fish could not be made to draw more than 29½ lb. The difference was in the instruments; it would be absurd to maintain that the fish had lost six or eight ounces in half as many hours.

TROUT-FISHING

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

"The Trout makes the Angler most gentlemanly and readiest Sport of all other Fishes, if you angle with a made Fly and a line twice your Rod's length or more (in a plaine water without wood) of three Haires, in a dark windy Day from afternoone."

William Lawson's "Secrets of Angling," 1614.

ANY angler who can recall the circumstances of the capture of his first trout has it in his power to revive at will one of the brightest images that enrich his halls of memory. He may have enjoyed many subsequent triumphs; he may have taken a double first—been successful in love, in war, in business—have won a hotly-contested election or have coaxed the coy *Eritrichium nanum* to unfold its azure necklace after a soaking English winter. For each of these prizes many good men have striven, and striven in vain; and none of those who have won them can have experienced the thrill of triumph without alloy that swells the heart of the lad who draws his first speckled beauty from the brook. Is this the language of hyperbole? I trow not. It is a plain, unvarnished description of my own feelings when, at a very tender age, I followed the instruction of a faithful old keeper by dangling a worm under a bridge over a westland burn. The line tightened; the ensuing struggle was brief, for I fancy the tackle was none of the finest, the water being in spate; and in a minute or two the prize was kicking upon the wet sward. I care not what were the dimensions of this notable fish; even at the distance of more—considerably more—than half a century they do not loom very large; but who shall estimate the value of a jewel by its bulk? I felt that I had been admitted to the rank of trout-fisher, and that fortune had no richer boon to bestow. I live beside that burn now, and never dream of wetting a line in it, though the trout therein are as brisk and numerous as of yore; but as often as I cross that bridge do my thoughts fly back to the golden morn when I first traversed the gamut of desire, pursuit, conquest and possession.

Trout-fishing has undergone a double revolution since that distant day. "Stewart's Practical Angler" was first published in 1857, opening the eyes of north-country anglers to the error of their method of fishing *downstream* for trout that lie with their heads *upstream*. Hitherto nobody

CAPTAIN RADCLYFFE'S RETRIEVER LANDING TROUT

Photo by W. A. Rouch. PLATE XXI.

TROUT-FISHING

[illegible] HON. SIR HERBERT MAXWELL, BART.

[illegible] the Angler most gentlemanly and readiest Sport of all other Fishes, [illegible] Fly [illegible] Rod's length or more (in a plaine water [illegible] Day from afternoone."

[illegible] Lawson's "Secrets of Angling," 1614.

A[illegible] angler [illegible] the circumstances of the capture [illegible] has it in his power to revive at will [illegible] brightest images that enrich his halls of [illegible] may have enjoyed many subsequent [illegible] may have taken a double first—been [illegible] in love, in war, in business—have won a [illegible] coaxed the coy *Eritrichium nanum* to [illegible] soaking English winter. For each of [illegible] have striven, and striven in vain; and none [illegible] can have experienced the thrill of [illegible] swells the heart of the lad who draws his first [illegible] brook. Is this the language of hyperbole? I [illegible] unrivalished description of my own feelings when, [illegible] followed the instruction of a faithful old keeper by [illegible] bridge over a westland burn. The line [illegible] was brief, for I fancy the tackle was none of the finest, [illegible] in spate; and in a minute or two the prize [illegible] I care not what were the dimensions [illegible] distance of more—considerably more—[illegible] not [illegible] very large; but who shall estimate the value [illegible] that I had been admitted to the rank of trout-fisher, [illegible] had no richer boon to bestow. I live beside that burn now and never dream of wetting a line in it, though the [illegible] therein are as brisk and numerous as of yore; but as often as I cross [illegible] bridge do my thoughts fly back to the golden morn when I first [illegible] of desire, pursuit, conquest and possession.

[illegible] has undergone a double revolution since that distant [illegible] Angler" was first published in 1857, opening [illegible] of [illegible] country anglers to the error of their method of fishing [illegible] for trout that lie with their heads *upstream*. Hitherto nobody

thought of fishing for trout in small streams except when these were swollen with rain. Stewart was the first to demonstrate the more difficult, but also more fascinating, craft of taking trout with the fly in low, clear water. His principles were few and simple, consisting of the use of very fine tackle and small flies (chiefly dressed as spiders, that is, with feathers wound as hackles, and without wings), of casting the line upstream and allowing the flies to float down. He maintained, and his doctrine was soon confirmed in the experience of his disciples, that whereas one may get much nearer to a trout from behind than he can from in front, without alarming it, a light rod and short line enabled the angler fishing upstream to catch trout under conditions of water and weather which would prove prohibitive to one fishing downstream with a double-handed rod and a long line.

Stewart applied to bait-fishing the same principle of working upstream, and devised the worm tackle which still bears his name, substituting three or four small hooks tied lengthwise on the gut to a single large hook formerly in use. Thereby he proved that trout could be taken with the worm in low, clear water, which had previously been deemed impracticable. Adepts affirm, and I shall be among the last to doubt it, that low-water worm-fishing for trout is one of the most delicate and difficult branches of angling; but whereas the only precepts enunciated in these pages are founded upon personal practice, I must plead incompetence as an excuse for not describing it more in detail. Whether for salmon or trout—for good or for ill—I am a fly-fisher pure and simple, wherefore *non ragionam di lor, mai guarda e passa.*

Stewart lived to see his innovations upon the ancient craft universally accepted in Scotland and northern England. Trout angling remains in that region very much as he left it at fifty years ago, albeit the reform which was about to affect the practice on south-country streams is now not without occasional exponents benorth the Tweed. That reform consists in casting a floating fly in a dry state upstream, over a trout whereof the exact position has been previously ascertained, instead of the old manner of "chuck-and-chance-it," i.e., fishing the whole stream on the chance of attracting what fish may be in it.

Before discussing these different systems of fly-fishing for trout, the fish itself deserves a little attention in order to divest it of some of the confusion which has prevailed as to its true nature.

The British freshwater trout is classified as *Salmo fario*; but, relying

upon certain modifications of internal structure and external features, some ichthyologists have tabulated as many as twenty-four different species. Scientific opinion, however, has now veered in the direction of recognizing all the European non-migratory trout as more or less permanent varieties of the single species of *Salmo fario*. The term *fario* has no distinct significance; it is a word used by the late Latin writers Ausonius and Isidorus to designate a fish which was probably a trout. Were it not for the inconvenience of changing a name so long established, a far better title for this most protean of fishes would be *Salmo variabilis*, which was actually applied by Lunel to include the four forms—so-called species—of trout inhabiting Lake Constance.

The distinctive features formerly relied on to indicate separate species have proved to be utterly untrustworthy. Take, for instance, the number of pyloric cæca, which are secreting appendages on the intestine. Parnell, Yarrell and Couch chiefly relied upon the superior number of these in the trout of Loch Leven as establishing that fine race as a species—*Salmo cæcifer*, and Dr Günther distinguished it as *S. levenensis*; but their conclusion has been vitiated by the fact that the number of cæca in Loch Leven trout have been found to vary between forty-eight and ninety, and in trout from other Scottish waters between twenty-seven and sixty-nine. This variation is probably the result of diet, as the function of these appendages is supposed to be that of a supplementary pancreas. Where food is plentiful and rich, pyloric cæca will be found numerous, and correspondingly few when it is scarce and poor.

Again, the spinal column might be supposed to be of a less variable character than organs composed of tissue; but even in this Dr Day found the number of vertebræ in British trout to vary from fifty-six to sixty.*

As to external character, every angler is familiar with the difference in colour and shape exhibited by trout inhabiting different waters, or even different parts of the same water. In this connexion I may be permitted to quote what I have described elsewhere as coming under my own observation:

> "I possess a small lake, some five acres in extent, of exceedingly clear water supplied by springs. It has been formed out of an old marl pit, and about thirty [now nearly forty] years ago I introduced trout into it. The water being very rich in insect and crustacean life, the fish have thriven amazingly; but, owing to the absence of suitable running water, they are unable to fertilize the spawn which

**British and Irish Salmonidæ*, p. 189.

forms in their ovaries at the usual season. Accordingly I have kept up the stock by turning in trout nearly every year since the beginning; with this result, that whatever outward difference might be apparent in the fish at the time they were turned in, after two seasons, at most, it becomes absolutely impossible to tell from their external appearance to what variety they originally belonged. Whether they had been small trout from a neighbouring stream, distinguished by conspicuous red spots, very distinct parr-markings and a predominance of yellow in their colouring, or other small trout much darker and less shapely from a more distant stream, or Loch Leven trout (*Salmo levenensis* of Günther)—all assume, when in prime condition, a very silvery appearance, with not more difference among them than is apparent among sheep of the same flock. Fingerling trout which, if left in their native burn, would never have weighed a third of a pound, grow rapidly under the favourable conditions of this little loch to three and four pounds in weight. The deposit of guanin under the scales is so uniform as to supply a complete disguise; the parr-marks completely disappear; so do most or all of the red spots; and I have taken some which, had the loch possessed any practicable connexion with the sea, I should have pronounced without hesitation to be salmon-trout."*

Among the varieties of British fresh-water trout there is none of which ichthyologists of the old school and anglers are so reluctant to surrender the specific rank as the great lake trout, classed as *Salmo ferox*. It was long considered to inhabit only certain deep lakes in the Highlands and in Ireland; but, in fact, there is a pool in the Test at Broadlands which receives a liberal supply of organic refuse from the town of Romsey, whence every season one, two or three monster trout are fished out with bait. I have seen several of these great trout weighing from 8 lb. up to 13 lb., any one of which was indistinguishable from *Salmo ferox* in a Highland loch. (See Plate IV, Fig. 1.)

Exactly similar trout I have seen taken from the river Moratcha in Montenegro, flowing into the Lake of Skutari. They inhabit that great lake, feeding on shoals of *scoranze*, a species of bleak, just as salmon inhabit the ocean, feeding on shoals of herring. Like salmon when full fed, they ascend the rivers in spring and summer. I went to Podgoritza one April to try and catch some of these great trout, but it was too early

British Fresh-Water Fish (Woburn Library Series), p. 259.

for any respectable mode of angling, as the water was still quite thick from the melting of the glaciers. But the natives were at work with long bamboos and huge lumps of lobworms, and during my brief stay two of these trout were taken by them, one weighing twenty kilograms (40 lb.), the other six kilograms (12 lb.).*

Many have been the days I have spent in Achnacarry Forest. They are days of yore now, but I bear in kindly remembrance how indulgent was my host, the late Cameron of Lochiel, who murmured not when I pled to be excused going to the hill, and devoted day after day to pursuing the great trout of Loch Arkaig. One of these days proved very convincing as to the identity of the *ferox* and *fario*. I had spent two days without success, trolling phantom minnows behind the boat up and down that lovely loch. Only once had I touched a fish, a big fellow somewhere round about 10 lb. He made a wild run, threw himself high out of the water, and went free. The hooks of the beastly minnow had straightened.

I did not feel satisfied that artificial minnows were as attractive to these deep-water monsters as natural baits might be; so next morning I caught a lot of small trout in the river and set forth in the afternoon with a couple of rods astern, each trailing a troutlet on spinning tackle. Just as we were shoving off, my host's son, the present Lochiel, ran down and begged to be taken aboard, and I gave the little chap one of the rods to hold. Strange to say, that happened to be the rod which was to do nearly all the execution. It was pretty rough that day, so that our boatman had had about enough of it by six o'clock, by which time we had taken five trout, weighing 17, 8, 5, 2½ and 2 lb. It would have baffled any fisherman to draw among these the line dividing *ferox* from *fario*; and well it might, for scientific diagnosis now declares that there is no such line.

The truth is that, though there is probably a maximum weight which trout may not exceed, there is no standard of dimension for this fish. Where the food supply is scanty, as in many British waters, especially in the north, the growth of trout is retarded, and they retain through life the marks and character of infancy—parr-marks, red spots, etc. The presence of so-called *ferox* among this dwarfed population may be accounted for by supposing that certain individuals have profited by exceptional luck in finding food, grown faster than the rest, and acquired a cannibal habit, devouring their own species.

The same process may be observed among pike. There is a lake in front

*I missed seeing the bigger of these fish, but I ate of the flesh of the smaller, which was just like salmon.

Photo by] [W. A. Rouch

MARKING A RISING FISH.

of my house in Galloway swarming with pike; one may take a score in a day with spinning bait, if he is so minded, the vast majority being fish of from 4 to 6 lb. weight. A friend who was keen on that sport was delighted when he brought back a 17 pounder; but I had the curiosity to open that fish, and lo! its weight was straightway reduced to 15 lb., for it had in its belly one of its own race weighing 2 lb.

The freshwater trout, then, may be considered a creature of circumstance, subject to variation in colour, size and structure under the influence of environment and food supply. In some vigorous varieties, such as the Loch Leven race, long isolation, coupled with abundant and stimulating diet, has imparted a degree of permanence to their peculiarities which is not apparent in those breeds which have to contend with less favourable conditions and more frequent vicissitude. And, although in replenishing the stock of any stream or lake it is certainly desirable to import fish of a vigorous race, it should never be forgotten that abundant food is indispensable for the production of fine trout. Fish of the finest strains—Loch Leven, gillaroo or what not—introduced into hungry waters will never become or produce anything but starvelings, whereas starvelings from a hungry mountain burn brought into rich feeding ground will not only start away themselves into rapid growth, but become the parents of a creditable offspring.

Having thus glanced at the nature of the creature which is the object of the trout-fisher's pursuit, the next matter for consideration is the manner of that pursuit. Fly-fishing for trout resolves itself into three main branches—(1) Stream-fishing with sunk fly; (2) Stream-fishing with floating dry-fly; and (3) Lake-fishing.

1. *Stream-fishing with sunk fly.* Reference has been made above to the reform effected in this branch of trout-fishing by the late W. C. Stewart, author of the "Practical Angler." His doctrine was specially applicable to the smaller streams of northern England and Scotland, where-of the current is more rapid and broken than in the more evenly-flowing rivers of the Midlands and southern counties, and it met with general acceptance among anglers because of the reasonable and simple principles upon which it was based. Stewart argued that the nearer a fisher could get to his fish without being seen, the shorter would be the line he must cast to cover it, and the surer the chance of hooking it. As trout invariably lie with their heads upstream, the right way to approach them is from below. Next, when a trout so approached does rise, still

with its head upstream, the angler's "strike" is more likely to fix the hook in its mouth than when, standing higher up the stream than the fish, the tendency of the strike is to pull the fly out of its mouth. Lastly, when the upstream fisher hooks a trout, he has the current in his favour in playing it, instead of against him, and there is less chance of the trout disturbing fresh water in its runs than if it had been hooked by one casting downstream.

All this is so manifest and is now so generally recognized, that one may feel surprised that it was left for Stewart to discover, or at least to enunciate it for the first time. Why did the obvious advantage of upstream fishing never occur to Barker, Hawker, Sir Humphrey Davy, Tom Stoddart, or any other of Stewart's innumerable predecessors in angling literature? The only hint upon the subject that I have found is a sentence in Ronalds's "Fly-fisher's Entomology," first published in 1836, to the following effect:

> "In brooks where fish are looking *upstream* for the flies and other food which float down to them, good sport is to be had in bright weather by walking up the middle and casting either fly or worm before you, especially where the water is *broken*, either by running over stones or by tumbling over ledges of rocks, etc., into little pools and basins. And observe, that fish cannot see *behind* them: all optics forbid it, especially when they are not looking out sharply."

Twenty years had to run before the truth thus indicated by Ronalds was formulated by Stewart and recognized by the angling fraternity; but during those twenty years, and for twice twenty years to follow them, the number of anglers continued to increase so rapidly and facilities of access to angling waters became so greatly improved, that trout ceased to be the simple, easily-deluded creatures with which our forefathers used to supplement their fare, and have now developed into some of the wariest animals of the chase. In all small and moderately sized streams, therefore, it is advisable to adopt upstream fishing. It is more laborious, because the line has to be cast more frequently; but it is also a more delicate art; the flies must be placed on the water with greater accuracy, and fishing with a short line upstream has this advantage over working downstream with a long line, that a fish rising at the fly can be seen before it is felt.

In fishing large rivers there is less need for concealment on the angler's part; the breadth and depth of the water help to keep him out of sight;

Photo by] [W. A. Rouch.

STALKING A FISH.

but even so, the natty upstream fisher will pull many a good trout out of side rills and runs near the bank which the downstream fisher would pass by untried.

These remarks apply chiefly to streams in a low state. When the water is high and stained with peat, which fishers of the old school considered indispensable to success, trout lose their excessive shyness, and may be taken quite readily upon flies cast downstream. Thomson, poet of "The Seasons," and a Tweedside angler, well knew how to take advantage of such conditions.

> Now, when the first foul torrent of the brooks
> Swelled with the vernal rains is ebbed away,
> And, whitening down the mossy-tinted stream,
> Descends the billowy foam—now is the time,
> While yet the dark brown water aids the guile,
> To tempt the trout. The well-dissembled fly,
> The rod, fine-tapering with elastic spring,
> Snatched from the hoary steed the floating line,
> And all thy slender wat'ry stores prepare.

Under such conditions, indeed, it is easy to fill a basket from a well-stocked stream; but the finished craftsman derives more satisfaction from such spoil as he may seduce from clear waters under sunny skies.

A word about the trout-fisher's outfit. First, as to the rod. Every tackle-maker's catalogue contains descriptions of double-handed trout-rods fourteen feet long; one may even occasionally see one of these in use; but for the life of me I cannot divine what purpose they are intended to serve which may not be effected equally well, and with more comfort to the fisher, by using a single-handed rod nine feet or so in length.

No trout that swims in British waters, and can be persuaded to rise to a small fly, will prove too powerful for such a rod. Of course the longer the rod, within due limits, the longer is the line that may be cast; but, except on the shore of a boatless loch, when and where need one wish to cast further than he can with a nine footer? One such rod I purchased five-and-twenty years ago, a neat split-cane when split-canes were somewhat of a novelty. It consists of two joints only, with a bayonet fastening, and although I have seldom used any other trout rod since I got it, I am ashamed to say that it has only been back to the tackle shop once, and that was to get a coat of green paint to dull the glitter of varnish. Yet it has been put to rough work in its time: it has landed a Test trout of 6 lb.

on the dry fly, hundreds of lusty sea-trout, and on one memorable occasion in a West Highland loch it brought ashore a salmon of 7 lb. and a yellow trout on the same cast.

My old friend, Charles Barrington, author of "Seventy Years' Fishing," who has passed away while I am inditing these pages, with whom and others I formerly shared the Avington water on the Itchen, used to stalk up and down the meadows beside that fair stream carrying a single-handed rod; but he was attended by a servant carrying a double-handed one, which, at this distance of time, appears to have been of prodigious length. I never saw him do execution with it; but I understand that it enabled him occasionally to put a fly artistically over a rising fish on the far side of the river, which a shorter rod would not have covered without causing the fly to drag.

Having spoken of split-cane salmon rods in terms somewhat short of eulogy, I have nothing but praise for that as material for a trout rod, especially for dry-fly work, which exacts the utmost precision in casting. No more perfect instrument could be placed in a trout-fisher's hand than a nine-foot split-cane by a good maker who has a reputation to lose; but beware of cheap manufacture in which the cane has been sawn, instead of rent, into the segments with which such rods have to be built up. No such good maker will allow a rod to leave his establishment unless it is built of cane well seasoned before it is rent and stored for several months after the segments have been glued together to allow the glue to set. There prevails some difference of opinion as to the merits of a steel centre in these rods. I have no hesitation in pronouncing in favour of the same, because it reduces the chance of a broken top to a minimum, and fracture of a split-cane rod is irreparable. A sharp knife and adhesive tape suffice to splice a broken greenheart by the waterside; but for a broken split-cane there is no remedy but a new joint.

In testing the action of rods before they are finished the maker of a rod in greenheart or any other solid wood can remedy inequality of play by paring down those parts which are too stiff. This is impossible in the manufacture of the split-cane article, because the strength of cane is in its outer skin, which must therefore be kept intact. If the trial proves any joint to be too rigid for the rest, it must be laid aside and a new one provided, for the limber joint or joints may not be shortened to bring them into play with the rest owing to the fancy of customers who require all the joints of a fly rod to be of the same length.

Photo by] [W. A. Rouch.

HOOKED!

It is evident, therefore, that a good split-cane rod cannot be sold at less than about three times the price of one made of solid wood. He who is inclined to hesitate at the extra initial cost should reflect that he is getting honest value for his money and obtaining an article that, with decent care, will last far longer than he will himself.

I made just now the confession that my favourite trout rod has been with the maker only once during the five-and-twenty years it has served me. This is an example of how *not* to treat a good article. Every other year, at least, a split-cane rod should be overhauled by a skilled hand; for the varnish is sure to crack and split off sooner or later, leaving the glue, upon which the cohesion of the segments depends, open to the destructive action of wet.

An old rod well varnished is a token that it belongs to a thoughtful owner; but in trout-fishing, especially in clear chalk streams, varnish puts the angler to some disadvantage by its glitter. Often one may detect from afar another, and it may be a rival, fisherman by the gleam of sunlight on his rod. It is not seldom that warning is conveyed to a rising trout by the same means. To obviate this, when I used to fish the Test and Itchen I had the varnish overlaid with pale green paint, which made my rod as like as possible to "a reed shaken by the wind."

2. *Stream-fishing with floating dry-fly.* Upstream casting had been practised for a considerable time in northern waters before it was regularly adopted in the trout streams of the southern counties, which are of a very different character. If a typical Scottish trout-stream, say the Blackadder, or any one of the innumerable "burns"—*anglice* brooks—which meander through Lowland scenery, be compared with a chalk stream like the Test or Itchen, they seem to possess but one feature in common, namely, that the water in both runs down hill. But in other respects they bear little resemblance to each other. The northern stream consists of alternate rippling shallows, brawling rapids and deep, often rocky, pools. A few hours' heavy rain may convert an insignificant rivulet into a roaring torrent, which, when the rain stops, subsides almost as quickly as it rose. The chalk stream, on the other hand, has an even flow level with its banks, swift in places, but preserving a glassy surface. Most of the channel is deep in proportion to its breadth; when the current spreads over shallow fords it does so in an easy, leisurely manner, quite different from the rush and rattle of a north country burn. The water is crystal clear, disclosing—here stretches of bright gravel—there waving

tresses of weed. Its volume never varies more than a few inches during the fishing season; it depends, not upon summer rain, but upon that of the foregoing winter, which, soaking into the chalk, is steadily distilled from that mighty reservoir throughout the months of drought; so that a true chalk stream is never "out of order" in summer, unless it be discoloured for a few hours by a thunder plump sending in road-washings.

Another important difference between northern and southern trout streams is this: whereas in the northern waters trout are usually hungrier than their southern kinsmen, and consequently may be induced to rise at the artificial fly at times when the natural insect is not on the water, in a chalk stream one must wait till the fly begins to rise—that is, when the aquatic "nymph," intermediate between larva and imago, comes to the surface and undergoes the wonderful metamorphosis from a water-breathing to an air-breathing creature. Until that takes place, the angler may pass the time not unpleasantly in studying the myriad beauties of bird, insect and flower which so lavishly enrich these southern valleys; but he should scan the stream pretty frequently, for so soon as the fly shows on the water, the serious business of the day begins.

It is difficult to describe the nature of that business and the manner of its transaction without becoming intolerably prosy. Izaak Walton's sense of literature was delicate enough to warn him against that; accordingly he cast his instruction into the form of colloquy between the docile Venator and the adept Piscator, introducing sundry subordinate characters—the Milkmaid, Coridon and others—to enliven the lesson. The device was so charmingly executed that it was adopted by a whole host of imitators. Richard Franck himself, Izaak's relentless critic, disdained not to take that leaf out of his great rival's book; it became the standard form of angling literature, and very tiresome, too, in hands less skilful than those of the masters of the craft. Perhaps the simplest, as it is the easiest plan, is to dive into the recesses of memory, reviving the incidents of a typical day with the dry fly; for although I can lay claim to no more than moderate proficiency in this branch of angling, I have had the advantage of fishing in the company of such adepts as Sir Edward Grey and Mr A. N. Gilbey, and of vainly emulating the consummate performance of these artists.

Let us then imagine Piscator setting out upon that part of the Itchen which skirts Avington Park as far down as the old brick bridge at Itchen

Abbas. It is half-past ten on a cloudless morning in the sweet o' the year —say the first week of June. A faint southerly current of air, not enough to be termed a breeze, sufficing only to waft the mingled fragrance of may-blossom, clover and bean-flowers—the incense peculiar to English summertide—and scarcely ruffling the surface of the glassy reach above the mill. On such a day the sunk fly might as well be plied on a turnpike road as in a chalk-stream; but sunlight, be it never so full and flaring, has no terrors for the dry-fly man; all he has to dread is a strong wind downstream and the absence of natural flies to set the fish on the move.

Piscator, having escaped from the stifling atmosphere of London by an early train, and disposed of an excellent breakfast at the Plough Inn, puts together his two-jointed, nine-foot split-cane and, tremulous with anticipation, runs the thin but heavy silk line up the rings. To this he attaches two yards—no more—of fine gut, and then pauses to ponder upon the choice of a fly. This is a far more important question than it is in salmon-fishing or in north-country trout-fishing; for these Hampshire fish are worldly-wise, schooled so long in suspicion that their wariness has become hereditary. Moreover they inhabit such a limpid medium that nothing but the most exact imitation of a natural insect may stand their scrutiny. As yet, however, there is no fly on the water; wherefore P. decides in favour of a red quill, which is perhaps as useful a general fly as can be named. Trout sometimes show a preference for it or the iron blue, even when olive duns or some other natural fly is rising thickly. Certain experts—Sir Edward Grey for one—disdain to assist the flotation of the fly by anointing it; humble practitioners cannot afford to forgo any expedient that may lessen the difficulty of floating a OOO hook over a nervous fish. Some of them hang a little bottle of paraffin to a button of the waistcoat, wherein to dip the fly immediately before using it. Not so Piscator, who has discovered for himself the secret that flies, once oiled and dried, remain permanently waterproof; so that all his stock have been anointed days—weeks—it may be months before.

Crossing the bridge to the left bank of the river, Piscator prowls stealthily up beside the stream. Ephemerids usually make their appearance at any time between 10.30 a.m. and 2.30 p.m., seldom earlier or later, except the mayflies which, during their brief festival, set the ordinary daily time-table at defiance. Howbeit the mayfly does not now inhabit this part of the Itchen. Piscator anxiously scans the water for the

first symptoms of a hatch of a humbler form of ephemerid—the duns. As yet there is no movement on the surface, save in yonder cushion of half-submerged weed where a nice trout is "tailing"—that is, nosing out crustacean delicacies from the green tangle. A broad tail-fin shining orange-tawny in the sunlight—a flash from a silvery flank—betoken a two-pounder in prime condition; but Piscator knows that a tailing fish can never be tempted by a floating fly. A sunk palmer may sometimes lure such a fish to its doom; but Piscator is out for sport, not for the pot, and passes on.

Sometimes a chance is offered of anticipating the rise of fly, and of such Piscator presently attempts to avail himself. There is a goodly trout lying on the far side of the stream, not rising indeed, for there is nothing to tempt him to do so, but poised midway between the surface and the bottom, evidently on the outlook for what the current may bring his way. The position is not an easy one, for it will take a longish cast to cover the fish, between which and the fisher the stream runs broad and strong, though smooth.

P. is no novice; nevertheless he cannot quite repress the tremor of excitement caused by the sight of his game. Rapidly waving his rod to and fro, he switches out line to the necessary length, and succeeds in depositing the tiny fly a couple of yards above the fish. It floats down, nicely cocked—nothing could be more perfect—when, just as it comes within a couple of feet of the trout's nose, the line bags in midstream, dragging the fly out of its course; the fish takes alarm and sinks slowly to the bottom, sidling off into cover of the weeds. That trout has been "put down," and no more time need be spent over him.

P. resumes his prowl, and has not travelled far before he detects a floating dun, then another, followed by a little flotilla of three or four. The rise is on. Twenty yards above him, close to the near bank, his quick eye detects a dimple on the surface such as an able-bodied water-beetle might make in rising to replenish its pipes with air. A north country fisherman, unused to the ways of chalk-stream trout, even if he recognized this slight disturbance as being caused by a fish, would pronounce it to be so small a one as not to merit attention. But P. knows better. Experience has taught him how different is the furtive rise and stealthy sip of a south-country two-pounder from the headlong dash and plunge of a Scottish trout, and, recognizing that his chance has come, he prepares to take full advantage thereof. This fish, be it great or small, is an

"easy" one—that is, it lies close to the near bank, and therefore directly above the angler, so that there is no chance of the fly dragging, which is the evil that besets one casting a longish line athwart a full stream.

Measuring the distance to a nicety, P. once more switches out the right length of line; then pauses before delivering it till the trout, rising once more betrays its exact position. Ha! there he is again. This time he poked the tip of a broad snout half an inch above the surface. *Ex pede Herculem*—he is a two-pounder for sure. Out goes the line, a gentle movement of the wrist checks it at the moment of extension, causing the fly to drop as lightly as a snow-flake six feet above the fish. The duns are floating down more thickly now; the artificial sails among half a dozen naturals right over the fish, which rises and sucks down one of the latter. P. recovers his line and times his second essay for the interval which generally separates the little companies of duns. Then he pops his red quill over the fish as nearly as before; this time it has no living competitors; exactly at the same spot there comes the most trifling stir in the water, P. raises his rod point smartly and—bir-r-r-r goes the reel as the trout dashes wildly into mid channel and twenty yards upstream. Note that if the angler's finger had been upon the line at this moment as, in salmon-fishing it ought to have been, the fine gut-cast would almost infallibly have snapped under the sudden strain. More disasters happen to beginners in dry-fly fishing from this cause than from any other; for although a chalk-stream trout does not fight for life half so long or so wildly as do natives of the colder waters of Scotland or Scandinavia, the terrified rush when first hooked is about as trying to nerve and hand as any incident in any kind of angling. Once tide that over, and it is surprising how soon a south-country trout will succumb.

Piscator was equal to the occasion, handling his fish very delicately during the initial flurry; but the trout's next move was a more dangerous one. Turning suddenly, it dashed downstream past the angler, so swiftly that reeling up was impossible; to keep the line taut he had to haul in the slack with his hand. Next, having run downstream some distance, the trout turned again as quickly as before and buried itself in a thick blanket of weeds. There was only one course to follow now, and Piscator took it, knowing that the manœuvre which fills a beginner with despair is not half so dangerous as it looks. In a lake where weeds lie all sorts of ways, it is almost impossible to extract a heavy fish that has run to them for refuge; but in a full-flowing stream the weed-tresses are all neatly

combed in one direction, and it requires little experience to prove how necessary it is to work with the grain. Instead of standing still and tugging helplessly at the imbedded trout, Piscator moves down to a point below where it lies, keeping a steady, gentle strain on the line. For a minute or so nothing happened: the trout may have freed itself, leaving the hook fast in the weeds. Ha! there is a movement; a sullen tug—then another; slowly the fish yields to the steady pressure, and presently is swimming in the open, whence the landing net soon scoops it ashore.* A pretty fish it is, with a small head set on thick shoulders, and a beautiful bloom on its finely rounded flanks. It pulls the index down to 1 lb. 12 oz.

The rise of duns is fairly on by this time, and trout are well on the feed. There is a stretch of swiftish shallows above where Piscator has landed his first trout, in which a number of fish are moving, chiefly small fellows under or just over the takeable limit of one pound; so, knowing how soon and suddenly the rise may cease, he passes quickly forward to where a dense grove of alders screens a favourite haunt of big trout. Here the river, dammed by a weir and hatch to feed a sawmill, is still, deep and clear—so clear that the pool has been dubbed the Aquarium, because it is so easy to see the fish therein. Easy to see, but not very easy to catch, forasmuch as their too visible presence has such a fascination for anglers as to cause the Aquarium to be more sedulously fished than any other part of the Avington water, with the result that its inhabitants have attained a keen sense of discrimination and very highly strung nerves. Howbeit, here as elsewhere, trout must feed, and when the food is on the surface, to the surface they will come.

The fly on the water is a pale olive dun, to which the red quill on Piscator's line bears resemblance only in its form; in colour it is several shades darker and more fiery. He hesitates whether to change to a closer imitation, but time is precious. He decides to try the red quill before discarding it, and the result proves that he is right; for, by the time he has reached the waggon bridge which marks the top of the pool—about 100 yards from the foot—the bag on his shoulder is several pounds heavier than when he started.

We need not follow him any further this morning, for the manœuvres in approaching a rising trout vary only in accordance with its position, the strength of the stream and the nature of the river bank.

*There is no foundation in fact for the fable that a trout can anchor itself by holding on to the weeds with its teeth.

Mention of the Aquarium revives a couple of personal reminiscences connected with it.

The first refers to an incident which, laughable as it may and does seem now, provoked certain expletive comments at the time which will not bear setting forth in type. I was then an assistant Whip in the House of Commons, and, my party being in office, Saturday was the only day on which I could escape to the waterside, Sunday being *dies non* for fishers on the Itchen. This restriction added an almost painful zest to the sport. A strong north-east wind careering downstream sometimes proved calamitous; but on the occasion referred to all was most favourable. How well I remember that July morning—traversing the empty, sunlit streets in a hansom (taxis were not yet even a dream of the future) to catch the 6 a.m. at Waterloo—two blessed hours and a half in the train and a ravenous onslaught on the eggs and home-baked at the lowly Plough.* I received a shock, however, on landing at the wayside station. The roads of the Itchen valley had been chosen as the scene of summer manœuvres; a large camp had been pitched in Avington Park; the country lanes resounded under the wheels of transport and artillery; the movements of columns of infantry and squadrons of cavalry accounted for clouds of dust far and near; our once tranquil valley was full of noise.

Now I trust that I may be credited with a fair share of patriotic spirit, nor was I insensible to the picturesque aspect of the occasion, for this happened before our gallant defenders had been clothed in khaki from head to heel. If anything could have indemnified me for interruption of the country calm, it was the glorified presence of a battalion of Gordon Highlanders marching through the village with pipes skirling and phila-begs swinging. Finding that part of the river had been marked off for the troops to bathe in, I hied away to the Aquarium, trusting to be able to pursue my vocation in peace in that secluded spot. Disappointment lay in wait for me here also; and disappointment is all too mild a term to describe my feelings when the first thing that met my gaze was the shining head of a fellow creature swimming right down the middle of the pool. Hailing him, I told him he had no business there—that the place allotted for the men to bathe was so-and-so.

"I'm not a man, I'm an officer," was the haughty response flung to

*Which has now blossomed forth into a smart little hotel, with garage, shell spirit and all the rest of it. But I'll warrant that the eggs are no fresher nor the home-baked more nutty in flavour than of yore.

me from midstream; and unless I had run off with the gentleman's clothes, I had no means of reprisal. I refrained from doing so, though they lay in tempting disarray under the alders, and returned to the Plough without having discovered a yard of water where fishing had not been rendered impossible. Sore, and perhaps sulky, at the time, I admit that the scenes of that day remain more brightly impressed on memory than the ordinary course of a morning's fishing would be likely to be.

The other incident referred to as connected with the Aquarium took place late in the season when the members of our little fishing club (six in number*) were allowed to take a friend to fish. It was early in September (our fishing closed on the 15th) when Mr Ashley Dodd came down with me. Each taking a stretch of water, we agreed to meet for luncheon at the Aquarium. Fish were rising capriciously that day, as is their wont towards autumn. I forget what I brought back with me to the trysting place—whether one brace or two; whatever it was, Mr Dodd had twice as many. I asked him what they had been taking. "Oh," said he, "I soon gave up the small flies; I got them with this"—showing me a hideous great red palmer with two hooks dressed tandem.

"You have been working the hatch-holes, I suppose," quoth I, disdainfully.

"Not I," said he; "I got all my fish in the open stream. I always put on this when they refuse a floating fly."

Now there was a good trout stationed over against where we lay on the bank; not rising, for there was nothing to rise at, but poised in a very attractive way. I had passed a red quill over him thirty or forty times before luncheon without eliciting the slightest recognition; no, not the quiver of a fin.

"Put your abomination over that one," said I, "and see whether he will notice it."

Mr Dodd let out a long line and, throwing the palmer several yards above the trout, allowed it to come past him, well sunk, with a lively jerking motion. At the first offer the trout woke up at once, dashed at the palmer, missed it, and returned to poise. The second time he seized it and was soon landed—2 lb.

I confess that I have never been quite so keen about dry-fly fishing since witnessing this as I was before. If Itchen trout (and there are none that

*The late Earl of Northbrook, Sir Edward Grey, Hon. C. Mills (now Lord Hillingdon), the late Mr Bonham Carter, the late Mr Charles Barrington and myself.

A SAMPLE FROM LOCH LEVEN.

it is more difficult to outwit) can be taken by such coarse means, why should one put himself to infinite pains with floating flies and gossamer gut. The zest—the crowning charm—of dry-fly fishing is weakened, if it is not destroyed, when it is demonstrated that chalk-stream trout can be conquered in bright weather by other and less delicate tactics.

But when all is said and done, there is no question that there is no branch of fly-fishing to compare in difficulty and delicacy with the dry fly. Not that the difficulty is greater than can be overcome by anybody who is fairly proficient with the wet fly. The easiest way to acquire the knack is to start when the mayfly is up. I had the luck to do so on May 20, 1893. Not only had I never fished dry before, but I had never seen anybody do so, but, having a general idea of what should be the proceeding, I managed to extract from the Test at Broadlands two brace of trout weighing 7½ lb. This gave the novice confidence. Next day was Sunday: on Monday morning I went out again and the very first fish I landed was the heaviest brown trout I have ever killed on the fly. It weighed 6 lb.—a clear case of duffer's luck.

It is uncertain when dry-fly fishing first became recognized as a regular branch of the craft. The earliest explicit reference thereto which I have come across is in Pulman's "Vade-mecum of Fly-fishing,"* as follows:

> "When the state of the atmosphere is favourable for the production of flies, they come down in swarms, and the fish, in order to seize them the more easily, station themselves close under the surface, gently lifting their noses to catch them as they sail over. Now it is impossible to make a soaked artificial fly swim upon the water as the natural flies do; so that, when cast by the angler to a fish thus occupied, it very commonly escapes his notice, engaged as he is at the surface. This is plain, because, if the wet and heavy fly be exchanged for a light and dry one and passed in artistic style over the feeding fish, it will be taken in nine cases out of ten, as greedily as the living insect itself. We admit, however, that to ensure this, imitation of the predominant species is required; opining that if the dry fly be widely different as regards size and colour, the fish will be surprised and startled at the novelty presented, and suspend feeding."

Here, had the necessity for casting upstream been insisted on, we

*Longman's, 2nd edition, 1846.

should have had the whole mystery of dry-fly fishing explained in a single paragraph. Writing twenty years later in his "Book on Angling," Francis Francis lays down that "the angler should never fish downstream if he can by any possibility fish up." He had studied and profited by Stewart's treatise; but, although Francis's excellent volume contained 472 pages, a single one of these sufficed for all he had to say about the dry fly; although in the preceding page he describes taking four brace of large trout from Lord Portsmouth's water on the Test with a wet fly deeply sunk. He refers to the dry fly as being "at times an invaluable method, whereby trout may be killed on fine, bright days when the wet fly would be almost useless." Evidently he was speaking only of the old pattern of trout-fly fished dry, not of the kind specialized for floating with cocked wings. This is not carrying the matter much further than did Ælianus the Honeytongued, who, writing about a hundred years after the birth of Christ, described very graphically the mode of fly-fishing practised in the rivers of Greece, and even gave particulars as to the material used in tying the flies.

In those streams where the mayfly cometh, it was the practice to fish with the natural insect "blowing"—that is, floating it out on the breeze with a line of floss silk. That, of course, was fishing dry; but it is curious how long it was before fishermen seem to have bethought them of fishing with the artificial mayfly dry. Thus in the "Chronicle of the Houghton Fishing Club, 1822–1908," which I had the pleasure of editing for the members, the first mention of a trout taken with artificial mayfly occurs on June 6, 1888, on which day, of eight trout weighing 17 lb. 7 oz. killed by Lord Moreton, one is specified as having been so taken, the rest apparently having been caught "blowing."

The trout streams of the Southern and Midland English counties fall into two classes—those wherein the mayfly abounds, and those where it is not known. It has disappeared from some rivers and parts of rivers which it inhabited in former years. The reason for this is hard to divine, though probably it is the result of excessive weed-cutting and removal of silt from the channels. The mayfly is never seen now in the Itchen above Abbot's Worthy, though it would not be surprising if some day it were to re-appear there in its pristine abundance.*

*I do not think I have ever seen the true mayfly (*Ephemera danica*) in Scotland, though I have been assured that it exists there, and Richard Franck in his *Northern Memoirs* (1651) writes of the green and grey drake in that country. When Tweedside fishermen talk of the mayfly, they mean the stonefly (*Perla bipunctata*), a totally different insect.

In the records of the Houghton Fishing Club above referred to there is apparent a remarkable alteration of periods of dearth and abundance both of mayfly and grannom in the Stockbridge water of the Test.

Thus, while in 1848, mayfly is described as "plentiful," in the following year the scarcity is referred to as "such as has been seldom witnessed, and is not wished for again." This was the beginning of a few lean seasons; it is noted on June 11, 1853, that "the fly is quite over, if that can be said to be over which has hardly appeared at all," but on the same date in 1855 (after the Crimean winter) mayfly are recorded as rising "abundantly." Another contrast is shown between the year 1882 when, on June 6, Colonel Seymour Corkran killed eight trout, weighing 19¼ lb. (heaviest 5 lb. 9 oz.), "blowing" natural mayfly, and the year 1908 when, for the first time in the annals of the Club, not a single fish was taken on the mayfly owing to nearly a complete absence of the insect.*

As to the advantage of having this beautiful ephemerid in a trout stream, anglers are not unanimous. Probably the position is this—those who have it in their waters would be sorry to lose it; those who have not got it are quite content to do without it. The fact is that, although the stimulating and abundant food provided by this insect increases the average weight of trout, and tempts to the surface large fish which never come there except when the mayfly is on, rendering the sport very exciting while it lasts, the rise seldom extends over a fortnight, and is followed by weeks of languor and repletion during which trout can hardly be induced to look at any fly. It would be surprising if they could, by reason of the prodigious quantity of this stimulating diet that they have consumed. Some years ago Mr Holland Hibbert of Munden landed with the mayfly in a single day 85 trout, weighing 120 lb., from the Gade at Cassiobury. Probably no one else has equalled this weight of British trout in a day's fly-fishing. He examined the contents of the stomach of one of these trout—a two-pounder, and found therein no fewer than 980 mayflies, entire or partially digested. To allow half this total as the average consumption of these 85 trout brings out the astonishing total of 41,650 mayflies, which, one should think, is a smart tax even upon Nature's prodigality, preparing the mayfly as she does for two or three days of aerial existence by as many years' immurement of the larvæ in river mud.

Quite apart from its effect upon the fishing, the mayfly carnival is a season of delight for every lover of country sights and sounds. The

*The total bag for that season was 829 trout, weighing 1,622½ lb.; and 34 grayling, weighing 65½ lb.

dancing clouds of brief-lived flies attract many predatory creatures besides trout. Wagtails, swifts and all the swallow tribe, finches, starlings, blackbirds, thrushes, and even rooks and gulls seem to lose their heads in the revelry; the river banks present one long-drawn pageant of sunlit massacre.

The festival ceases with the precarious honeymoon. Before the summer solstice the passionate dancing of the males has ceased—their brides of a day have dropped their eggs on the water—the surface of which is thickly strewn in the backwaters with the corpses of both sexes, known among fishermen as "spent" or "burnt gnat." The trout, gorged by the frantic orgies they have shared, sink into lethargy, indifferent to whatever swarms of delicate duns may float over them; only an odd one here and there may be tempted by a Wickham Fancy or, of an evening, by a Sedge. It is at midsummer that the merit of a stream with no mayfly is apparent; for although trout in all south-country waters seem to lose some of their zest for surface feeding as the dog-days draw near, there is always something to be done among those that have not been debauched by the mayfly surfeit.

In July and August the gloaming is sometimes a useful hour. Windless warmth brings out the sedges and the big trout come to the surface after them; but the evening rise is always an elusive chance. A mournful angler has entered in the Houghton Club chronicle that "there has been no evening rise for two years." At best, it is a feverish delight, as he must admit who, wrestling with a tangled casting line or replacing a lost fly in the waning light, hears the suck and sob of a three-pounder, knowing that in fifteen minutes the last gleam on the water will be quenched. No; a shining noontide with fleets of floating duns ("picket wings" as they call them on the Test) is what the dry-fly fisher has learnt to pray for as the best that fortune can bestow.

No sooner had dry-fly fishing become established as a recognized branch of sport than there ensued a rivalry between its practitioners and the old wet-fly school, of whom they spoke slightingly as the "chuck-and-chance-it" people. Admitting that dry-fly practice is the utmost refinement to which angling can be, or has been, brought—that it requires far more skill to detect and stalk a two-pounder in crystal clear water, to bring the fly over him without the slightest "drag," and to land him on a OOO hook and gossamer gut, than is required to kill a fish of equal weight with stronger tackle in a swollen northern river, coloured

WADING IN LOCH LYDOCH

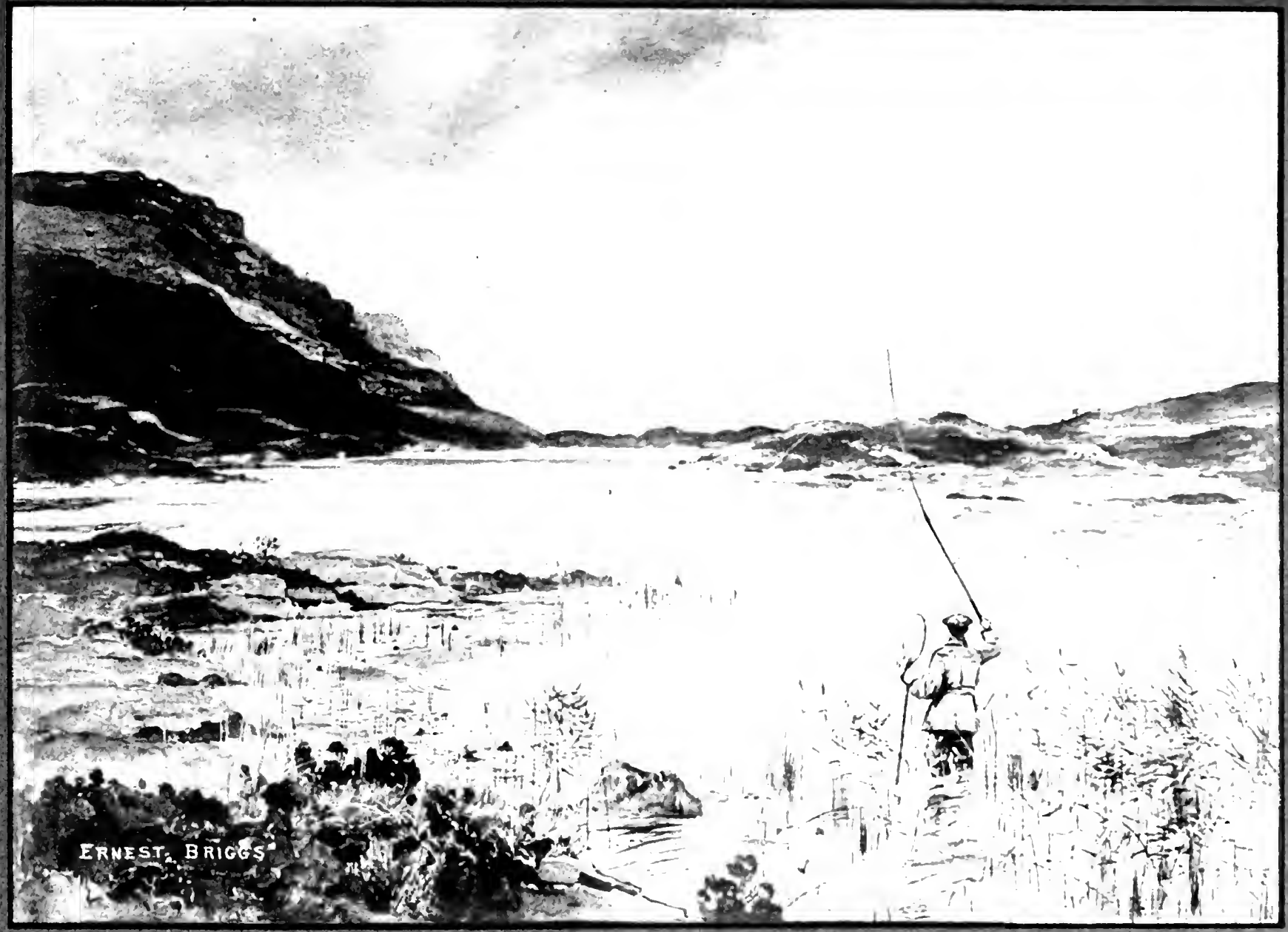
PLATE XXVI.

[illegible] of [illegible] fires [illegible] many predatory creatures [illegible] swifts and all the swallow tribe, [illegible], star [illegible] and [illegible] and gulls seem to lose their [illegible] long-drawn pageant of [illegible]

[illegible] Before the summer [illegible]—their brides of [illegible] which is thickly [illegible] of both sexes, known among [illegible] The [illegible] by the frantic [illegible] whatever swarms [illegible] one here and there may [illegible] of an evening, by a Sedge. It is at [illegible] no mayfly is apparent; for [illegible] seem to lose some of their [illegible], there is always some- [illegible] debauched by the mayfly

[illegible] useful hour. Wind- [illegible] out come to the surface [illegible] exclusive enance. A mourn- [illegible] Club chronicle that "there has [illegible] At best, it is a leverish delight, as he [illegible] tangled casting line or replacing a [illegible] the suck and sob of a three-pounder, [illegible] the last gleam on the water will be [illegible] fleets of floating duns ("picket [illegible] Test) is what the dry-fly fisher has learnt [illegible] for one can bestow.

[illegible] dry-fly fishing, become established as a recognized [illegible] ensued a rivalry between its practitioners [illegible] school of whom they spoke slightingly as the "chuck- [illegible] that dry-fly practice is the utmost [illegible] can be, or has been, brought—that it re- [illegible] and stalk a two-pounder in crystal clear [illegible] without the slightest "drag," and to land [illegible] than is required to kill a fish of [illegible] a swollen northern river, coloured


ERNEST A. BRIGGS

like porter—it must also be admitted that there are times and conditions for both methods. It would be as idle to fish with a dry red quill in the Tay or Blackadder in spate as it would be to exhibit a cast of Heckum-peckum, March Brown and Yellow-and-Teal on a summer day to the nervous inhabitants of Abbot's Worthy or Stockbridge water. But there are times when the dry fly will ensure success even in the larger rivers of the north that might be denied to the most skilful fisher with the wet fly. Let us, as fly-fishers, be catholic in our judgment, if not in our tastes. It is somewhat strange that the ultra-advocates of dry-fly, while extolling the superior delicacy and science required for their craft, have never, so far as I have heard or read, employed the strongest argument of all in its favour, namely, that whereas the wet-fly fisher presents to the fish what he calls "flies," and makes them perform subaqueous leaps and bounds such as no living fly could execute, the dry-fly man has not only to simulate the exact form and, as is generally believed, the colour of the natural insect, but has to let the current give it precisely the same motion as the floating creature would have.

Let us leave it at this—the object and purpose of a fly-fisher being to catch fish, he is the best practical angler who adapts his procedure—wet or dry, sunk or floating—to the conditions of wind, water and weather, and the dry-fly fisher has to overcome greater difficulties in this respect than the wet-fly fisher.

3.—*Lake fishing for trout.* The charm of lake-fishing differs from that of stream-fishing in the same degree as lake scenery differs from river scenery. There is less variety in it; indeed the ordinary method of fly-fishing in a loch—casting from a boat allowed to drift slowly—is apt to suffer from monotony. On the other hand, it has attractions which many streams are without. The trout in a Scottish or Irish lake are likely to be of greater size and superior condition compared with those in the neighbouring streams. There is more mystery in a lake than in a river; the angler's imagination is stirred by visions of the monsters that may inhabit its depths. There seems always a chance of getting hold of something beyond ordinary strength and weight, and most men who have done much lake-fishing have had that fancy fulfilled.

But the outward aspect of a lake is no guide to the number or average size of the trout therein. Where a mountain loch is fed by numbers of hill burns affording unlimited spawning-ground it may contain nothing but

swarms of pigmy trout, whereas the most unpromising tarn may produce two- and three-pounders. Everything depends on the food supply. In lakes where trout are able and allowed to multiply without check or stint, there is seldom enough natural food to enable the multitude to obtain more than enough to sustain life. They live and die as pigmies, retaining to the last those lateral stripes known as parr-marks, which are the distinctive badge of adolescence among salmon and trout. There is no more certain sequence of effect upon cause than the increase of average weight resulting from reduction of numbers in an overstocked lake. This is very clearly shown in the returns from Loch Leven, the most productive sheet of water in Great Britain.* Those for the last three seasons compare as follows, and a similar proportion of numbers and average weight prevails throughout the whole period of which record has been preserved:

1910.	Trout.	lb.	ozs.
April	434	320	8
May	4,246	3,212	4
June	11,019	7,899	12
July	10,974	7,965	0
August	12,685	8,519	4
September	1,706	1,284	0
Totals	41,064	29,200	12

Average weight, 11$\frac{1}{7}$ ounces.

1911.	Trout.	lb.	ozs.
April	536	448	10
May	946	785	11
June	4,220	3,473	4
July	7,520	5,743	7
August	7,577	5,825	8
September	1,744	1,533	11
Totals	22,543	17,810	3

Average weight, 12½ ounces.

*It probably has rivals among the Irish loughs, but none of these has had the same care and protection bestowed upon it. Poaching is very rife in most parts of Ireland, and statistics of the annual takes are not forthcoming.

1912.	Trout.	lb.	ozs.
April	884	686	1
May	13,931	9,260	9
June	16,520	10,500	0
July	7,832	5,527	13
August	8,226	6,264	5
September	1,651	1,336	0
Totals	49,044	33,574	12

Average weight, $10\frac{33}{36}$ ounces.

The highest average recorded is that for 1903, viz., 1 lb. $5\frac{3}{4}$ oz., but that was also the year of the lowest total of fish taken—2,002. It may be observed incidentally that the vast increase in the annual catch is the result of the protective and regenerative system adopted by Mr P. D. Malloch, who, in 1908, took over the management of the fishery for the Tay Fisheries Company. Pike, which used to swarm in Loch Leven, have been persistently fished with trammel nets, and are now so scarce that only fifteen were taken in the twelve months ending in September, 1912. When Mr Malloch began upon them, the captures were reckoned by thousands. A few years ago, a very large proportion of the trout taken were caught on the minnow; but it is pleasant to record that now minnow-fishing is the exception, and may come to be prohibited altogether, as it ought to be in such a free-rising lake.

Personally, I have never fished Loch Leven, nor do I entertain any desire to do so. There is too much of the competitive element in the proceedings there to attract me, and I hold that directly generous emulation merges into competition for prizes, ill luck must be embittered without the glow of success being enhanced by the feeling that the loss or capture of a good fish carries its equivalent in cash. During the season 1912 one hundred and sixty-two competitions were decided on the bosom of this fair lake, and in these no fewer than 2,052 anglers took part, accounting for the capture of 13,166 trout, weighing 8,343 lb. This is a wonderful test of the fertility of Loch Leven and testifies to the science and energy which have been applied to the development of its resources; but the performance has parted with the charm inherent to wild field-sport. Give me rather a couple of hours' climbing to a lonesome mountain tarn, with the chance of finding the wind propitious to casting from its boatless, reed-girt shores, and I will not exchange the chance of two or three brace of

wildling trout for the certainty of a full basket under the guidance of a couple of sophisticated boatmen on cosmopolitan water, who probably have bets with other boatmen upon the result of one's fishing, and are dissatisfied with one who will not fish with as feverish diligence as if he were baling a sinking boat in mid-channel.

I know of no waters closely adjacent to each other between which the contrast is more striking in the quality of the fish they contain than the different lochs and tarns which skirt the Moor of Rannoch. That vast solitude is over 1,200 feet above sea level, and contains the wreck of the primeval forest imbedded in profound peat. At the north-east extremity of the moor, in the heart of Corrour Forest, lies Loch Ossian, a fine sheet of water filling a granite basin between Beinn-na-Lap and Carn Dearg, both above 3,000 feet high. The lake is four miles long and nowhere more than half a mile across, abounding in shallow bays, but of great depth down the middle of the cleft. No more promising sheet of water can be imagined by the fly-fisher, but none could prove more disappointing. It is full of little starveling trout whereof one might catch a hundred or two in a day without excessive effort, yet would not one of these fish exceed the dimensions of a robust gudgeon.

In the same water system, and distant only a few hundred yards from the head of Loch Ossian, are half a dozen insignificant little tarns, varying in size from half an acre to, say, twenty acres. From one of these, a dark little mere of about three acres at most, it was reported that a station-master on the West Highland Railway had taken a trout of 4 lb. on a night-line. I was fired with ambition to try my luck there in more chivalrous fashion and induced a friend to go with me. Having described the result of our expedition elsewhere, I crave leave to quote the passage:

> "Only a small part of this tarn can be commanded from the shore, so wide and dense is the belt of reeds surrounding it; so my host undertook, in the face of almost insurmountable difficulties, to cause a boat to be conveyed thither. It was latish before this was accomplished; the soft air of a grey morning had hardened and turned gusty—not the kind of after-day to bring trout to the surface. However, there we were to make the best of it; there was the lochan, lying snugly in lee of the sheltering dome of Beinn-na-lice (which, if you would not be misunderstood, you must pronounce to rhyme, not with "slice," but with "streaky"), its waters impenetrably dark in the calm—silver frosted in the breeze.

"I had not the patience to wait till the boat was launched. Leaving it to my fellow-explorer, I began whipping along fifty yards or so of rocky shore, the only part of the loch accessible from the land. I cannot have made more than half-a-dozen casts when there came an eddying bulge in the brown water that made my heart stop beating. Nothing came of it, however: a big fish had missed the fly, and would not be tempted to give another offer. Nor did I stir another fin in the rest of my beat. By the time I came to the end of it my friend was afloat—and, by the Hokey! he's in a fish and a good one too, judging by the arc of his nine-footer. Deep, deep and ever deeper the unseen quarry plunges, visiting every quarter of that little mere, warning all his clan to take shelter from danger. Full twenty minutes were added to the past before that doughty fish could be brought to the surface and towed into the net. And how much did he weigh, think you? Six pounds? Four? Not less, surely, to judge from the stiffness of the fight. Nay, but he barely pulled the steelyard down to 2½ lb., having been hooked, not in the mouth, but in the dorsal fin. A beautifully shaped fish, but very dark, suitably to his native environment, without a single spark of scarlet on his skin.

"By this time the evening had turned cold and raw. We left the Nameless Tarn with but a single specimen of its inhabitants . . . but the enjoyment of that afternoon bore no proportion to the weight of the basket."*

The moral of this long yarn might have been conveyed more succinctly, but set a fisherman talking of the past and trust him to test the quality of your patience. The said moral is that, where there is no check on multiplication, a trout loch is sure to become a congested district, peopled with fingerlings. To net out annually nine-tenths of the trout in Loch Ossian would involve immense labour and the sacrifice of millions of innocent lives, but it would turn a worthless fishery into an excellent one. There is only one other expedient, namely, to turn in pike, but that is too hazardous to be thought of. Even in dealing with a lake in the possession of a single proprietor, he should never consent to the introduction of a fish that is enormously prolific and has proved the ruin of some of the finest natural trout waters in the realm. He might decide to risk the fortunes of his own fishery, but there are very few waters unconnected with the fisheries of other people, and these soon become infested also if pike are

*_Memories of the Months_, Fifth Series, pp. 186-9.

introduced into any part of the system. Loch Ossian, being situated near the summit of a high watershed, would prove, if it contained pike, a source of contamination to the Spean and the Lochy, both of which are fine salmon rivers.

It is impossible to estimate the extent of fine fly-fishing water which has been irretrievably ruined by the distribution of pike. In pre-Reformation times these fish were greatly valued as furnishing food for Lent and other *jours de jeune*. They grow very fast and fat in stew ponds, and what their flesh lacks in quality (and in my humble opinion it lacks *everything* in that respect) it makes up for in quantity. There is no other way of accounting for the presence of pike in certain waters than by assuming that they were transported by the monks to the waters attached to various religious houses. A suggestive circumstance may be noted in Wigtownshire bearing upon this hypothesis. In the parish of Inch there are three large lakes, besides sundry tarns. Two of these lochs are within Lord Stair's spacious park of Castle Kennedy; they measure respectively about three-quarters of a mile and a mile in length, and contain plenty of trout, but no pike. About a mile to the south of these lochs lies Saulseat Loch, taking its name from the Abbey of Saulseat, which stood on a promontory within it. In this there are no trout and swarms of pike. Now as all three lochs are of similar character, lying within the same geological formation and at the same level—less than fifty feet above the sea—I feel convinced that we shall be doing the Premonstratensian monks of Saulseat no injustice by attributing to them the presence of pike in the water which was at their door.

However, I must get back to my text, and leave pike to be dealt with by another hand, merely impressing upon my readers that once pike become established in a lake it is impossible to get rid of them save by draining the water away, and even that is not always successful, for the pike fry harbour in any little ditch or runnel connected with the lake, which, after being refilled, will soon be as badly infested as ever. Industrious netting will serve to reduce them to such numbers as are consistent with the presence of a fair stock of trout; but as the trammel net is the only really effective way of dealing with these pirates, large trout are just as likely to be taken as pike.

It is not to be understood that pike and trout do not manage to co-exist in many of our northern lakes. In large sheets of water with plenty of shallow bays and fed by streams in which the trout may spawn, there

is often good trout-fishing; it is in basins of limited dimensions that trout are soon exterminated by pike, which then take to feeding upon each other. Where they do co-exist sport of a very exciting order may be had by the fly-fisher who hits off the right time. That time generally occurs somewhere in the last week of May or the first fortnight of June, and the moment is when a heavy rise of large natural flies is on. Then the big trout that have outlived risk from all but very large pike come boldly to the surface, and flies cast where one has been seen to rise is almost sure to establish business relations. I think the loveliest brace of trout that ever I caught were taken thus in Loch Dornal, Ayrshire. I had no boat, and it was tantalizing in no small measure to see fish rising far beyond the compass of a nine-footer; but by wading in a sandy bay I managed to cover two rising fish, and brought them both to land, the largest weighing 3¼ lb. Nobody, until he has experience of it, knows how a trout hooked under such conditions can fight. Lake trout are usually caught from a boat, and although, even so, the play of a north-country fish is a brilliant affair compared with that of a Hampshire trout of equal weight, the boat enables the angler to follow his fish, thereby gaining an unfair advantage. But a man wading is practically a fixed point; he must remain in shallow water while the trout fights hard for the deep. In salmon-fishing with strong tackle the fisher can put on considerable pressure; but trout gut will not stand against the rush of a three-pounder; the fish must have what he chooses to take, and there is a point beyond which the cast will not stand the strain of submerged reel-line. I have been run out and broken by large lake trout through no fault of my own, and the chance of this adds materially to the excitement of the game.

I have recourse to my fishing diary for a notable example of the man afloat being beaten by the man ashore. A friend took me to fish one afternoon in July, 1890, in the Thornton Reservoir which supplies the town of Leicester. It is a fine sheet of water varied by capes and bays, as like as no matter to a natural lake. My friend (at least as good a trout fisher as myself) took a boat, while I preferred to fish from the bank, although I had no waders. When we met again at sundown, I had twenty trout weighing 24 lb. and he had eleven weighing 11 lb., the aggregate basket being 35 lb.

A word of caution about loch-wading. It is much safer than river-wading, owing to the absence of current, but it has a danger peculiar to itself owing to the treacherous nature of the bottom. A smooth, gravelly

bottom sometimes ends abruptly in an expanse of soft mud or adhesive clay, and there are few sensations more unpleasant than sinking suddenly into such places. They are easily avoided if the fisherman will "ca' canny," travelling through the water with a sliding motion of the feet along the bottom so as to test the ground in advance. Thigh boots or waterproof stockings are useless for loch-wading—worse than useless, for the angler is certain to go deeper than he means or to make a false step, letting the water in over the tops, when his comfort is at an end for the day—a mild way for expressing intense discomfort, as I can testify from recollection of a long day's salmon-fishing on the Lochy.

Those who are acquainted with that fine river will not require to be told that it cannot be fished without wading—deep wading, too—in strong streams paved with round, smooth stones that give a very treacherous foothold. Having been invited to fish the Camisky water, I had to borrow a pair of wading trousers from my host, who hung them outside the smoking-room door ready for my use on the morrow. There were three boys in that house, sons of my host; I am not aware of having done anything to incur their displeasure, nor do I attribute the dastardly trick they played me to malice any more than I suspected a retriever puppy of unorthodoxy when it got hold of my Bible, tore out and chewed, but refused as resolutely as any professor of the higher criticism, to swallow, the greater part of the Pentateuch. No, it cannot have been malice, but sheer mischief that prompted these youngsters to fire an arrow through the seat of the breeks I was to wear the next day. I never detected the lesion until I plunged waist-deep in the icy river next day, and then if, like the prophet Elisha, I could have pressed she-bears into my service, those sniggering youngsters would have had a rough time.

Wading-trousers are indispensable for loch-wading, and make it much less fatiguing than fishing from the bank, for the water lends considerable support as one proceeds with a sort of gliding motion. As we are on the subject of waders, let me offer a wrinkle to the purchaser of wading trousers. Do not be persuaded to take a pair too short in the fork. The vendor of these articles perhaps never wore a pair of waders; he is concerned only to ensure a neat fit and consequently is anxious they should not look baggy; but bagginess is indispensable if one is to avoid the intolerable discomfort caused by trousers too short in the fork. If the fisherman's coat is of the ordinary length, he will have to tuck it into his waders, which not only makes his figure needlessly inelegant, but makes the

waders oppressively hot. To avoid this, he should have a jacket of rough tweed cut after the fashion of an Eton boy's, with no tails. (Salmon-fishers please copy.)

Wading gear is now so moderate in price and so much lighter in wear than it was before rubber came into general use that one does not often now see a man wading without that protection. It was a common sight fifty years ago, but the practice was pretty sure to carry retribution with it. One of the most miserable afternoons I ever spent in fishing was in an expedition to Loch Dee, a lovely sheet of water in the heart of the wild uplands of Galloway. No road runs near this loch, and several miles of rough walking have to be faced after driving to the nearest point. It was a blazing morning in July: I elected to fish off the shore while my two companions took the boat. I had no wading gear; but I soon took to the water as the shore was not suitable for bank-fishing. The cool of the water was very refreshing after our hot walk, and I began well, getting three nice trout weighing 4 lb. But before long the scene changed; the sky became overcast, mist descended on the hill, a bitter wind arose lashing the lake into mimic rollers, and the trout ceased to rise. I was a poor, shivering wretch when the boating party returned (with seventeen fine trout) to find me cowering under a peat hag. I have been very shy of wading waderless ever since.

In some lakes, of course, wading is impossible owing to the nature of the bottom. Having recounted an instance of discomfiture in one that was well suited for wading, I may as well describe another instance in which the conditions were prohibitive. A friend and I had been fishing all morning an excellent loch on my own property with very indifferent success. A couple of miles across the moor there is a black tarn, all that remains of what has once been a considerable sheet of water which has disappeared through drainage. Legends were afloat of what my old boatman called "material troots" in this peat hole, but I had never had the enterprise to cast a fly on it. Failing to do much in Loch Eldrig, we agreed to test the truth of these legends. Away we trudged, but on arriving at Drumnescat Loch, we found casting to be impracticable, owing to a strong breeze beating upon the only part of the shore that was clear of a broad belt of reeds. We resolved, therefore, to crossline the water (a mode of fishing which has since been made illegal). Fastening the ends of our lines together with eight or ten flies dangling from them, we started to windward and moved slowly

along, one on either bank. We had not gone far before there was a plunge and a splash, the line tightened for a moment, and then fell loose. A large fish had broken the connexion between us and escaped. There was no time to reel up, so to save fouling the bottom, I ran backwards through the heather, and presently went heels over head into a peat hag. It would have been a very diverting spectacle for a third person had there been one to witness it. There was none; but I felt at the time that the convulsion of laughter which shook my companion betrayed a very heartless want of sympathy. We repaired damages, and managed to expiscate three or four trout from this weird little mere, of from half a pound to a pound in weight, very well shaped and of a peculiar tench-like olive colour.

This has turned into a very discursive chapter; it is full time to pay attention to the matter that ought to be in hand. Loch fishing has this in common with dry-fly fishing, that, in lakes that contain trout of considerable size—say a minimum average of 12 oz.—it is well-nigh useless fishing except when fly is on the water. At other times casting at large in the likeliest places, that is, where the water is not more than three or four feet deep, one may get an odd trout here and there; but it is monotonous work and it is better not to exhaust the energy of the boatman before fish begin to show on the surface.

My companion in the cross-lining adventure was one of a party of three fishers who on a summer day made an expedition to Loch Skerrow, which contains some very fine trout, in the hill district of Galloway. Each of them put half-a-crown into a sweepstakes to be won by him who had the largest trout by luncheon-time. It turned out a "dour" day; there was no natural fly on the water; my friend, being familiar with the symptoms, knew that it would be but an outside chance that brought anything up to the artificial, so he abandoned the loch, wandered down the small burn running out of it, and caught one troutlet weighing about an ounce and a half. His diagnosis of the conditions proved accurate. He produced his prey at luncheon time and won the sweep!

When the regular rise is not on, casting from the shore is more likely to be successful than from a boat, for there are often a few trout scouting for insects blown off the land. Thus I have sometimes caused trout to show themselves by shaking bushes by the waterside, and afterwards cast over them and caught them. For the same reason, good sport may often be had in a strong wind, perhaps too strong for boatwork, among trout

on the outlook for windfalls. One such chance is recorded in my fishing book as having occurred on an April morning many years ago. There was no boat on a small loch which I had walked a considerable distance to fish; it was blowing so hard from the east that it was only possible to cast from one side of the loch; but in a very short time I landed ten trout in perfect condition weighing 10¼ lb.*

Summer floods give a chance of sport which should not be neglected, especially in lakes where trout are large and scarce owing to the presence of pike. When the hill burns come tumbling down in spate and the clear water of the lake is stained for some distance with the peaty discharge, trout are attracted to the burn-mouths by the food brought down to them and rise well to the fly.

There is a wide difference between the seasons at which trout arrive at good condition in different lakes. I own a small loch in which the trout are in prime order before the end of March, whereas in another and larger one in the same parish they are not fit to take till the month of May. No doubt this depends upon the greater and less abundance of larval, crustacean and molluscan food.

Early in the season lake-trout are to be sought with the fly in shallow water, from four to five feet deep, in bays and round promontories or islands, for it is in such places that they chiefly resort in search of food; but as the water becomes warmer and the flies more abundant fish may be seen rising at any distance from the shore. In fishing a loch to which he is a stranger, the angler will naturally rely upon local fishermen for guidance as to the likeliest beats. In large lakes trout may be of very different size and quality in some parts from what are to be found in others. If the wind is pretty rough, long lines flecked with foam will form on the surface; it is a good practice to cast over one of these, for it is in them that the trout have learnt to look for floating fare.

The local expert is sure to prescribe certain patterns of flies as indispensable to success, others as prohibitive thereof. You will lose nothing by following his advice (except perhaps in the matter of size), but at the same time you will probably gain nothing, except his good humour. In no lake or pond that I have ever fished have I been able to detect any need for more than half a dozen patterns; indeed I should be quite prepared

*Memory is a treacherous minx, and no fisherman should rely upon her for his facts. Had I done so in this instance I should have written 16 trout, weighing 16¼ lb.; indeed, I was on the point of doing so; but on turning up the record I found the numbers as given above.

to match my chance in any lake with three flies of the same pattern against another angler fishing with whatever he chose. It is all very well and interesting to prepare exact imitations of the fly that happens to be on the water; but the value of the imitation seems to be sacrificed when the mock insect is presented to the notice of the trout going through movements under water which the natural fly can only rival in the air. Commend me therefore to a few flies bearing a generic resemblance to aquatic insects—say Greenwell's Glory, Zulu, Yellow and Teal, the Francis trout-fly, Red Palmer and March Brown. I care not what natural fly the trout in a lake may be feeding on, if he catches sight of one of these the odds are that he will take it, if it is about the right size to fit his fancy.

As to what that size may be a good deal of misconception prevails. One is apt to suppose that it is expedient to use larger flies in a loch than in a stream because of the greater depth of water and the heavier average of the fish. I believe this to be a mistake, unless the wind is rough. In a light breeze it will be found that flies tied on O or OO hooks, such as are usual in stream-fishing, will raise far more trout than what are usually called loch flies. The fish when hooked require to be handled more delicately than on coarser tackle and it takes longer to bring them to the net; but in any loch which is much frequented by anglers, small flies will ensure a heavier bag than big ones. Larger flies, up to the size used for sea-trout, may be used in rough weather when the water is lashed into waves; indeed a small double-hooked salmon-fly will sometimes prove effective when trout cannot be induced to come to the usual flies. I am told that most of the fine trout in Blagdon Reservoir are taken by that means.

Fishing the Darent at Lullingstone with Mr Legh (now Lord Newton), I spotted a big trout in the pond in front of the castle rising at flies under the boughs of a horse-chestnut. I put a red quill over him several times, but there was no current to move it, and he would have nothing to do with it. In the afternoon I showed this fish to my friend, who took off his fine gut cast, substituting a stronger one, to which he attached a double-hooked "Silver Grey." Much to our surprise the trout took it like a lion and was soon landed—3 lb. or thereabouts, if I remember aright. Such a feat is all very well as a *tour de force*; but most of the charm of trout-fishing would be missing if it were done with strong tackle. To kill such a trout as this on finest gut and OO hook is a *tour d'adresse*.

Much respect as fishermen owe to W. C. Stewart, "the Practical Angler," to the soundness of whose principles I have paid tribute in another chapter, one cannot but marvel at his advice about a rod for fly-fishing from a boat or the shore of a lake.

> "The rod for fly-fishing from a boat need not be longer than thirteen or fourteen feet, as that is long enough to keep the angler out of sight. . . . In angling from the bank a rod of two feet longer might be advisable."*

Phew! it makes one's back ache to think of such a weapon. One has to cast much more incessantly in fishing a loch than in fishing a stream, whether for salmon or trout, wherefore the labour of wielding so long a rod would be distressing. As for keeping out of sight, I have often been surprised by the indifference shown by trout to the approach of a boat. Sometimes one will take the fly almost under the blade of an oar. Nine or ten feet is plenty of length for the rod.

I have left myself little space for observations on minnow-fishing for trout, whether in stream or lake. Of the use of spinning-bait in rivers I have no experience whatever, wherefore all I shall say about it is that it is a detestable practice. The river trout is too chivalrous a creature to be offered any lure except the fly—natural or artificial. It is the case, of course, that trout may be taken with minnow at times and under conditions when they will not look at the fly, but in proportion as the minnow-fisher is successful so does he diminish the chances of the more dainty craftsmen. I have known men, skilful at sport, so keen on killing that, if fish could not be taken by fair means, they would have them out by foul, such as "snatching" a salmon. Now I am far from pronouncing minnow-fishing in rivers to be foul sport; but it seems to me very poor sport and inimical to the interests of fly-fishing. So it is when practised in lochs, with one exception, namely, when the game is the great lake trout usually termed "ferox." That class of trout never can be taken except with a sunk bait, for it dwells in the deepest water where surface lures cannot be seen. Trailing a spinning-bait for ferox from the stern of a boat requires no skill on the part of the fisher; the boatmen take him over the likeliest ground; he is responsible only for the soundness of his tackle. And faith! *that* had need to be sound in every part, for a large ferox fights like a small torpedo.

These great trout seem to draw towards the shallows in the evening.

*The Practical Angler, p. 174 (ed. 1857).

That, at least, is the time of day when I have had most success with them, after spending many of the earlier hours trying, not always successfully, to keep awake while the boatmen plied their oars. The battle, when it comes, is worth waiting and working for, and the prize, when you have won it, is sometimes a very handsome creature. Sometimes, however, it is the reverse, for the old males turn very dark in autumn, like a kipper salmon.

Before parting from the British trout, courtesy to a distinguished foreigner demands a tribute of admiration to the Rainbow trout (*Salmo irideus*). Alas! that the elusive habits of that splendid creature require that our admiration must be of a purely platonic character, for although our allegiance to the British trout seemed at first in danger of being shaken by the superior brilliancy and vigour of the rainbow, further acquaintance with that species has proved how improbable it is that it has come to stay. It disappears from waters to which it may be introduced in the United Kingdom as surely and mysteriously as does its fellow-countrymen, *Salvelinus fontinalis*. Our regret for this is mitigated by the fact that the rainbow trout spawns at the same season as the grayling, wherefore it is unseasonable throughout the fairest fishing months of the angler's year.

A few years ago it seemed as if the rainbow trout were going to obtain almost exclusive possession of the Tamar, where they were introduced by the Duke of Bedford at Endsleigh. In the summer of 1909 they were simply swarming in that pretty river, chiefly of small size—three or four to the pound, though there were a few taken about a pound in weight. In fly-fishing one caught at least two rainbows to every yellow trout, and they were worthless, being out of condition in summer. But the Duke informs me that they are disappearing fast even from the Tamar, and no man knoweth whither they have gone. To the sea, perhaps, unless it be to that bourne whence no traveller returns. Rainbows certainly have been taken in sea nets at the mouth of the Conway and elsewhere. One day in February, noticing a brace of these fish weighing about 2 lb. apiece on a London fishmonger's slab, I went to inquire whence they had come. The salesman showed suspicion of me, thinking, I suppose, that I might be an inspector sniffing about for a violated close-time. I had some difficulty in persuading him that my inquiry was made purely in the interest of natural history, when he vouchsafed the information that these pretty foreigners had been taken in a net at the mouth of the Aberdeenshire Dee,

and had been consigned to him as sea-trout. And veritable sea-trout they possibly may turn out to be, for American ichthyologists incline to believe that rainbows are but adolescent steel-head salmon and therefore seasonably migrant to and from the ocean.

Notwithstanding their evasive habits in this country, it is not altogether labour lost to rear the lovely rainbow trout in hatcheries for stocking lakes and ponds withal. The young fish grow at an extraordinary speed, far faster than common trout, and often attain a weight of two or three pounds before they disappear. So long as they remain accessible to the angler, they give him excellent sport, for they are very free risers and hard fighters, and their flesh affords very delicate fare.

TROUT-FISHING IN NEW ZEALAND

By C. E. LUCAS

NO survey of the angling capabilities of the world would be complete without a notice, however succinct, of the remarkable results following upon the introduction of British brook trout into New Zealand. No species of the genus *Salmo* is indigenous to that island; indeed, in the whole southern hemisphere the only freshwater representative of the family *Salmonidæ* is a small smelt (*Retropinna Richardsonii*) inhabiting certain lakes in New Zealand; consequently the enterprise of those who attempted to acclimatize Atlantic salmon and British trout in the rivers of the Southern Pacific was an arduous and doubtful experiment. Thus far, the importation of salmon ova into the waters of Tasmania and New Zealand has failed to succeed in establishing the king of freshwater fishes therein; but his absence is amply atoned for by the readiness with which the common trout and the rainbow trout have taken to these distant quarters, and the prodigious size to which they grow there may well excite the envy of stay-at-home anglers.

These trout have assumed, not only the weight of true salmon, but also their appearance and, to some extent, in Tasmanian waters, at least, their migratory habit. The red spots, so characteristic of British brook trout, disappear after the yearling stage, and the fish become as silvery as salmon, marked also with the X-shaped black spots which distinguish that species. In Tasmania these trout desert the rivers in summer, repairing to the sea, where they are taken of large size in nets, those that escape returning to the rivers to spawn in autumn. It remains to be ascertained by protracted and accurate observation whether we have in this phenomenon an epitome and reflection of the salmonoid history in the northern hemisphere during tertiary and post-tertiary times.

The following particulars have been prepared from notes kindly supplied to the editor by Mr C. E. Lucas, of Warnham Court, Horsham, and may serve as a fair sample of the sport to be had in New Zealand. One is apt to suspect that trout of the fine weight attained by the fish killed by Mr Lucas and his friends are of the kind which can only be tempted by spinning baits or worm; but it will be seen from Mr Lucas's notes that the artificial

RIVER TONGARIRO, NEW ZEALAND.

ON THE RIVER WAIAU.

fly accounted for far more than three times the number of fish taken on the spinning bait; and this, in the opinion of most anglers, goes greatly to enhance the quality of the sport. It will be observed also that all but three of these fish were rainbow trout; particulars of brown trout fishing are given on a later page.

"The Tongariro River, New Zealand, flows from the great central mountains into the southern end of Lake Taupo Moana at Tokaanu. The scenery is very fine; on the east are the Kaimanawa Mountains, on the west the Tongariro Mountain, and, a little further south, the active volcano Ngauruhoe, with its snow-clad, smoking summit. Away to the south-west towers the mighty Ruapehi. Broad stretches of grass-land border the river, broken in places by thickets of *manuka* and *phormium* or New Zealand flax.

"The river itself is a wide, sweeping stream, very swift and rough in places, in others resting in long, placid reaches. When the water is fairly high, the best lure is a salmon-fly; but the fish, chiefly rainbow trout, take the spoon and Devon minnow well in clear water. Brown trout will seldom take in the daytime; they may be caught at night, however, on a spinning bait, and, if there is a moon, on the fly. Rainbow trout run up to 20 lb. in weight, and brown trout as high as 35 lb.

"Lake Taupo Moana is a magnificent sheet of water, five-and-twenty miles long and sixteen miles broad, lying at an elevation of 1,250 feet. Large trout are taken therein by trolling, and there is good fly-fishing in the innumerable streams that pour into it from the surrounding mountains."

TONGARIRO RIVER, NEW ZEALAND, 1912.

A. A. JAMIESON, C. C. HENDERSON HAMILTON, G. N. HORLICK, C. E. LUCAS.

Date.	Rod.	Pool.	Weight of each Fish and Lure.	Total per day for each Rod.		Total per day for all 4 Rods.	
				Number.	Weight, lb.	Number.	Weight, lb.
March 4	G. N. H.	Down's Pool	11 lb., Gold Devon	1	11	1	11
March 5	G. N. H.	Nihoriki	8 lb., *Brown Trout*, Gold Devon	1	8	3	26¼
	C. E. L.	Jessie's Pool	9¾, 8½ lb., Gold Devon	2	18¼		
March 6	C. C. H. H.	Down's Pool	8¾ lb., Spoon	1	8¾	3	25¼
	G. N. H.	Nihoriki	6½ lb., Spoon	1	6½		
	C. E. L.	Jessie's Pool	10¼ lb., Gold Devon	1	10¼		

TONGARIRO RIVER, NEW ZEALAND, 1912—*continued*

Date.	Rod.	Pool.	Weight of each Fish and Lure.	Total per day for each Rod.		Total per day for all 4 Rods.	
				Number.	Weight, lb.	Number.	Weight, lb.
March 9	A. A. J.	Nihoriki	3 lb., Spoon	1	3	7	51
	C. C. H. H.	Jessie's Pool	9 lb., Spoon	2	14½		
	C. C. H. H.	Top Stream	5½ lb., Spoon				
	G. N. H.	Jessie's Pool	10½ lb., Brown Devon	4	33½		
	G. N. H.	Nihoriki	9½, 6¾ lb., Brown Devon				
	G. N. H.	Top Stream	7½ lb., Brown Devon				
Mareh 10	A. A. J.	Down's Pool	9, 7½ lb., Red Sandy Fly; 6½ lb., Spoon	7	49	17	113½
	A. A. J.	Nihoriki	9, 7, 6½, 3½ lb., Spoon				
	C. C. H. H.	Down's Pool	8¾, 6½ lb., Jock Scott Fly	3	19½		
	C. C. H. H.	Nihoriki	4½ lb., Spoon				
	G. N. H.	Dead Stream	5½ lb., Spoon	3	18¾		
	G. N. H.	Down's Pool	6¾ lb., Spoon				
	G. N. H.	Nihoriki	6½ lb., Brown Devon				
	C. E. L.	Nihoriki	8¾, 7¾, 3 lb., Spoon; 6½ lb., Blue Devon	4	26		
Mareh 11	A. A. J.	Nihoriki	9 lb., Spoon	1	9	7	61½
	C. C. H. H.	Down's Pool	9½ lb., Joek Seott Fly	2	15¾		
	C. C. H. H.	Nihoriki	6½ lb., Jock Scott Fly				
	G. N. H.	Dead Stream	9 lb., Spoon	1	9		
	C. E. L.	Down's Pool	9½ lb., Durham Ranger Fly; 11¾, 6½ lb., Silver Doetor Fly	3	27¾		
March 12	A. A. J.	Gull Beach	9½, 9½, 9, 8¾, 6½, Red Sandy Fly; 10½ lbs., Durham Ranger Fly	6	53¾	31	248½
	C. C. H. H.	Poplar Pool	8 lb., Jock Scott Fly	11	82½		
	C. C. H. H.	Grace's Pool	9½, 6½, 3¾ lb., Jock Scott Fly				
	C. C. H. H.	Hamilton's Pool	10½, 10, 6¼, 5¾, 5½ lb., Jock Scott Fly; 9¼, 7½ lb., Durham Ranger Fly				
	G. N. H.	Poplar Pool	8¾, 6½ lh., Silver Doctor Fly	3	22¾		
	G. N. H.	Graee's Pool	7½ lb., Silver Doctor Fly				
	C. E. L.	Gull Beach	8 lb., Silver Doctor Fly; 10½, 9¾, 9, 8¼, 7¾, 7½, 7½, 7½, 7, 6¾ lb., Durham Ranger Fly	11	89½		
Mareh 13	A. A. J.	Gull Beaeh	10½, 8½, 8¼, 7½, 6, 6½, 6, 4½ lb., Durham Ranger Fly	10	69½	23	182½
	A. A. J.	Down's Pool	6½, 4½ lh., Durham Ranger Fly				
	C. C. H. H.	Grace's Pool	9, 8½, 8½, 5¾ lb., Butcher Fly	5	38½		
	C. C. H. H.	Hamilton's Pool	6½ lh., Durham Ranger Fly				
	G. N. H.	Gull Beaeh	8¾, 6½ lh., Durham Ranger Fly; 6½ lb., Invicta Fly	3	21½		
	C. E. L.	Gull Beach	20, 11½, 9¾, 7 lb., Durham Ranger Fly	5	53		
	C. E. L.	Down's Pool	4¾ lb., Black Ranger Fly				
Mareh 14	A. A. J.	Gull Beaeh	13½, 10, 8, 8, 7½ lh., Durham Ranger Fly	5	47	20	176½
	C. C. H. H.	Hinurewa	9½, 9½, 9, 9, 8½, 8½, 6¾, 4 lb., Durham Ranger Fly	8	64		
	G. N. H.	Hinurewa	8½ lb., Durham Ranger Fly	2	15¾		
	G. N. H.	Nihoriki	7½ lb., Spoon				
	C. E. L.	Gull Beaeh	16½, 10½, 9½, 7¾, 5½ lb., Durham Ranger Fly	5	49¾		
March 15	A. A. J.	Down's Pool	7½ lh., Durham Ranger Fly	1	7½	4	31
	C. E. L.	Hinurewa	8½, 5½ lh., Durham Ranger Fly	3	23½		
	C. E. L.	Nihoriki	9½ lh., Gold Devon				
March 16	A. A. J.	Hinurewa	8, 7½ lb., Gold Devon	3	25	4	39½
	A. A. J.	Nihoriki	9½ lh., Spoon, *Brown Trout*				
	C. E. L.	Nihoriki	14½ lh., Spoon, *Brown Trout*	1	14½		

TONGARIRO RIVER, NEW ZEALAND, 1912—*continued*

Date.	Rod.	Pool.	Weight of each Fish and Lure.	Total per day for each Rod.		Total per day for all 4 Rods.	
				Number.	Weight, lb.	Number.	Weight, lb.
March 17	A. A. J.	Gull Beach	14, 9, 6½, 5½ lb., Jock Scott Fly; 8½, 6 lb., Brown Devon	8	66		
	A. A. J.	Kahiwi	8¾, 7¾ lb., Brown Devon				
	C. C. H. H.	Hinurewa	10½, 8½ lb., Gold Devon	2	19	17	147¾
	G. N. H.	Graee's Pool	6½ lb., Durham Ranger Fly	1	6½		
	C. E. L.	Gull Beach	13½, 6 lb., Silver Doctor Fly; 10¾, 10, 8¾, 7½ lb., Black Ranger Fly	6	56¼		
March 18	A. A. J.	Poplar Pool	9, 7½ lb., Durham Ranger Fly	4	28½		
	A. A. J.	Down's Pool	7, 5 lb., Durham Ranger Fly				
	C. C. H. H.	Gull Beach	10, 8½ lb., Jock Scott Fly	2	18½		
	C. E. L.	Hamilton's Pool	11½, 9½, 7¾, 8½, 10 lb., Durham Ranger Fly			14	116
	C. E. L.	Down's Pool	5½ lb., Silver Doctor Fly; 8½ lb., Black Ranger Fly; 8 lb., Gold Fineh Fly	8	69		
March 19	A. A. J.	Gull Beach	8½, 8, 4 lb., Durham Ranger Fly	3	20½		
	C. C. H. H.	Nihoriki	4 lb., Black Doctor Fly	1	4		
	C. E. L.	Down's Pool	10, 9½, 8¾, 8½, 8, 7½ lb., Black Doctor Fly; 8¾, 6, 4½, 3 lb., Black Ranger Fly	10	73¾	14	98¼
March 20	A. A. J.	Hamilton's Pool	11½ lb., Thunder and Lightning Fly				
	A. A. J.	Jamieson's Reach	9½, 8½, 8 lb., Jock Scott Fly; 10½, 9½, 9, 8½, 8½, 8, 8 lb., Durham Ranger Fly	11	99½*		
	C. C. H. H.	Gull Beach	15, 12, 10 lb., Black Ranger Fly; 10½ lb., Black Doctor Fly	4	47½		
	G. N. H.	Graee's Pool	4½, 3½ lb., Durham Ranger Fly				
	G. N. H.	Jessie's Pool	9½, 9, 8½, 4½ lb., Durham Ranger Fly	6	39¼	32	282¼†
	C. B. L.	Poplar Pool	9½, 6¾ lbs., Durham River Fly				
	C. E. L.	Graee's Pool	9 lb., Durham Ranger Fly				
	C. E. L.	Down's Pool	8¾, 8, 7½ lb., Jock Scott Fly				
	C. E. L.	Jessie's Pool	7¾ lb., Gold Devon	11	96		
	C. E. L.	Nihoriki	12, 9½, 6¾ lb., Gold Devon; 10¾ lb. Spoon				
				197	1,610¼	197	1,610¼ lb.

Total: 194 Rainbow Trout, 3 Brown Trout = 197 Fish.
Weight: 1,610¼ lb. Average Weight per Fish: 8·17 lb.
Largest Fish: 20 lb. Weight. Smallest Fish: 3 lb. Weight.

*Heaviest day's catch for one rod. †Heaviest day's catch for all 4 rods.

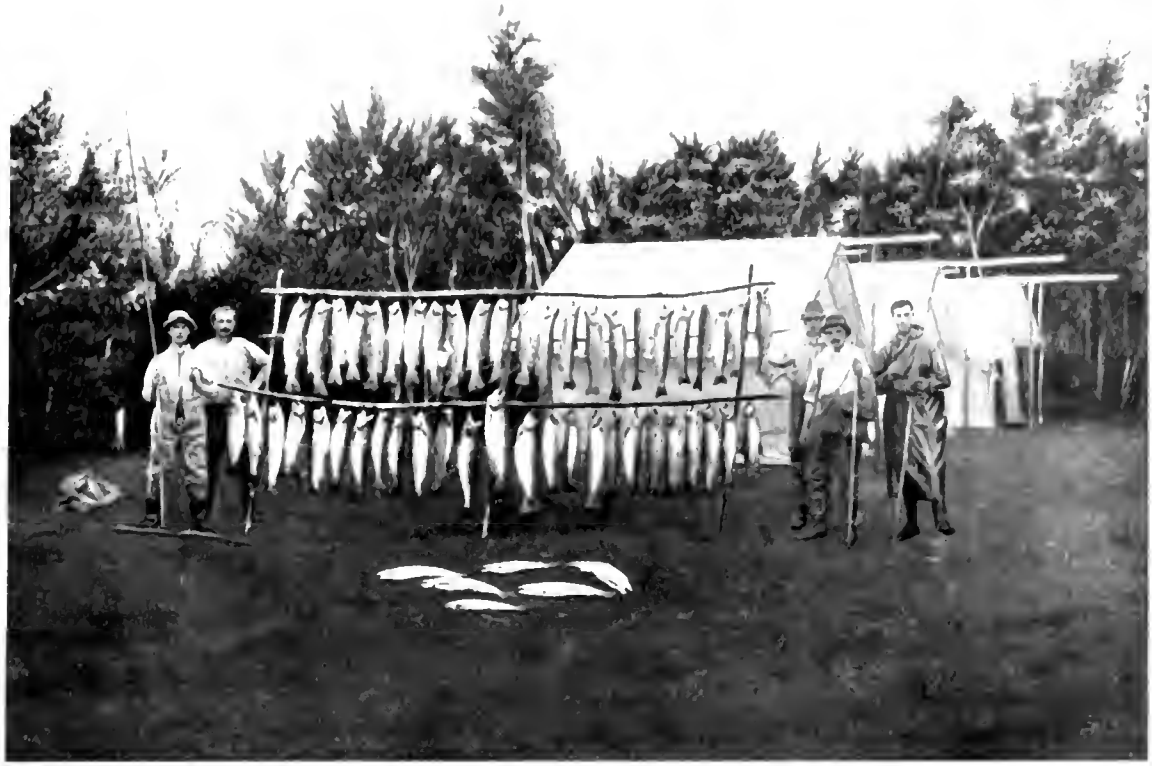
TONGARIRO RIVER, NEW ZEALAND, 1912—*continued*

Rod.	Bait Spinning.				Fly.									
	Blue Devon.	Gold Devon.	Brown Devon.	Spoon.	Durham Ranger.	Black Ranger.	Red Sandy.	Jock Scott.	Black Doctor.	Silver Doctor.	Butcher.	Goldfinch.	Invicta.	Thunder & Lightning.
A. A. J.	—	2	4	8	31	—	7	7	—	—	—	—	—	1
C. C. H. H.	—	2	—	4	11	3	—	15	2	—	4	—	—	—
G. N. H.	—	2	5	5	10	—	—	—	—	3	—	—	1	—
C. E. L.	1	8	—	5	30	10	—	3	6	6	—	1	—	—
	1	14	9	22	82	13	7	25	8	9	4	1	1	1

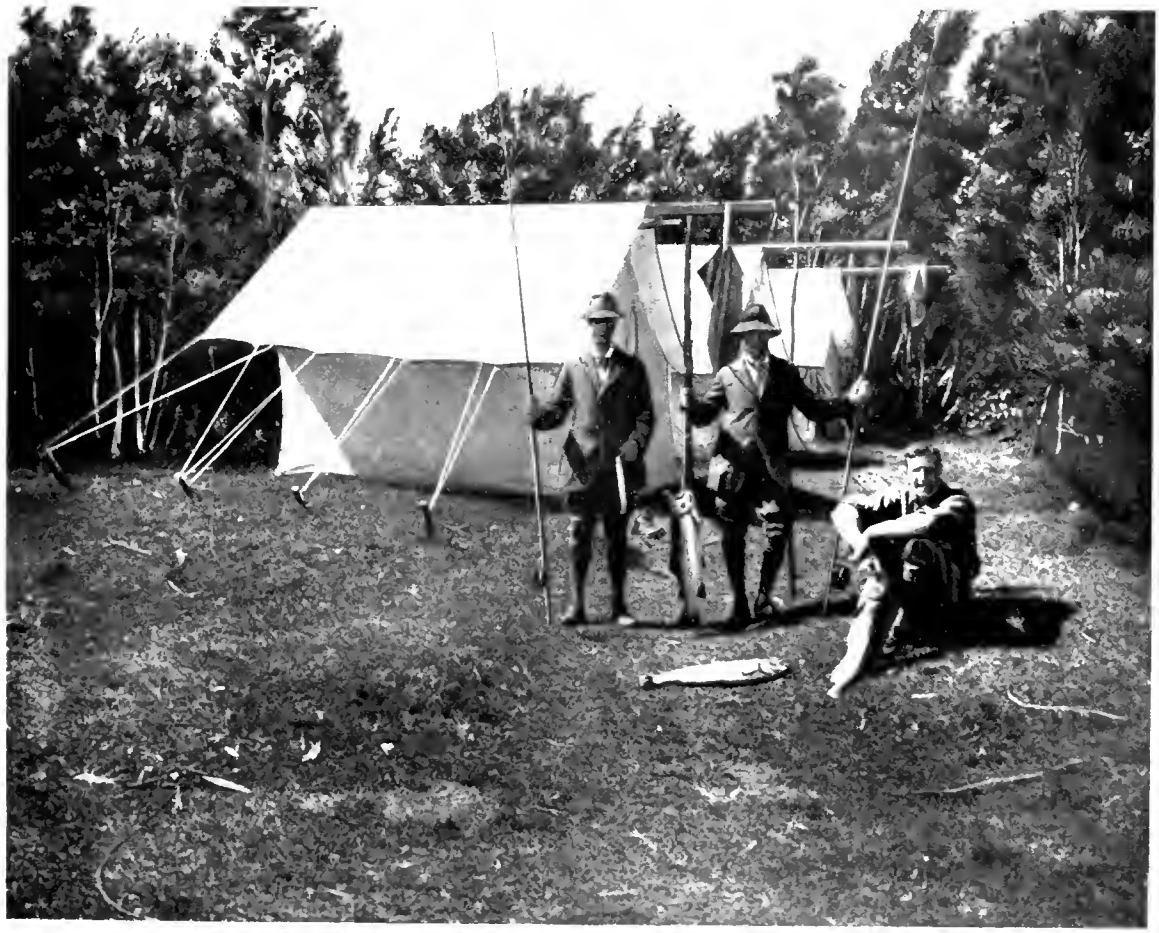
	Total Number of Fish Caught on Bait.	Total Number of Fish Caught on Fly.	Total Number of Fish Caught by each Rod.	Average Weight per Fish.	Total Weight of Fish Caught by each Rod.
A. A. J.	14	46	60	7·97 lb.	478¼ lb.
C. C. H. H.	6	35	41	8·10 lb.	332¼ lb.
G. N. H.	12	14	26	7·40 lb.	192¼ lb.
C. E. L.	14	56	70	8·67 lb.	607¼ lb.
	46	151	197	—	1,610¼ lb.

N.B.—In the Southern Hemisphere the month of March, when these fish were taken, corresponds to the month of September in Great Britain.

So much for angling prospects in the northern island of New Zealand; in 1902 Mr C. H. Osmond communicated to "The Field" newspaper a description of his sport in some of the rivers of the southern island, which, of course, enjoys a cooler climate than the other. On the Kakanui River, sixty miles north of Dunedin, he spent ten days with his two boys and caught about four hundred brown trout, averaging somewhat over a pound, but including one of 6 lb. Next, in the Owaka River, further south, he recorded one day fourteen fish weighing 22 lb., and the following day seven fish weighing 16 lb., including one of 5 lb. Three days on the Makarewa River yielded twenty-six brown trout weighing 46 lb.; and a couple of hours in an evening on the Waikiwi River gave one trout of 7 lb. and another of 2 lb.



RAINBOW TROUT FROM THE RIVER TONGARIRO.



ANGLERS' CAMP ON THE WAIAU RIVER.

"Having noticed a big one rising on the wrong side of the river for me, I told a friend about him. He drove out next morning a distance of six miles, and was home in time for breakfast at nine with two pictures of brown trout; they weighed 7 lb. each, and might have been brothers. . . .

". . . The Waiau River is comparatively unknown, even to New Zealand anglers, but it is an angler's paradise. Before going, I had been advised to take extra strong gear and long line. I thought eighty yards would do; but I found that I required one hundred and fifty!

"It is hard to describe fishing on the Waiau. The river itself is a very big one; I should judge it to be at least 130 yards across—deep and swift, yet with some splendid ripples. On the night of my arrival I went out about 8 o'clock, lit a huge fire on the shingle with big driftwood, and started. My first fish was about 10 lb., and a nice job it was trying to gaff him in the flickering light from the fire. It is not an easy matter to land a 10 lb. trout from a fast river even in the daytime; but at night it is a caution.

"However, by 12 o'clock I had landed fifteen fish weighing 104 lb., and had lost four casting lines, supposed to be extra strong ones. The following day I caught seventeen fish averaging 6 lb., and lost another cast. The fish took the minnow and made straight for the opposite bank, not up or down stream, but straight across. With a salmon rod and the strongest gut procurable, I could do nothing with these very big ones, but have made up my mind to find out how big they are next season, by having a line which will reach across this river. If anyone wants exciting angling, let him try the Waiau River in January or February (corresponding to July and August in the northern hemisphere)."

CHAR

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

SEATED one day in the cool dining-room of a Norwegian hotel discussing a first-rate *middagsmad*, or midday meal, an English clergyman next me remarked upon the excellence of a dish of trout whereof we were partaking.

"Excellent indeed," quoth I, "but they happen not to be trout." As he seemed to think me a very ignorant person, probably a Cockney tourist, and repeated the assurance that they *were* trout, I took the head of one of these fishes and showed him that the vomer or palatal bone bore teeth only on the fore-part, proving them to be char; whereas had they been common trout, they would have borne teeth along the entire length of that bone.

The genus *Salmo* is divided according to its dentition into three groups or subgenera; indeed, some modern systematists consider the difference between them to be so marked and permanent as to justify their recognition as three distinct genera, namely, (1) *Salmo*, including all forms of salmon and trout; (2) *Salvelinus*, comprising the chars; and (3) *Hucho*, consisting only of one species, the Danubian huchen.

In salmon and trout the vomer is armed with teeth along its whole length, although only those on the head or fore-part are permanent, the others being apt to drop out in mature and aged fish. In the char, the vomer is proportionately shorter than that bone in the mouths of salmon and trout; a deep transverse depression or groove marks off the head from the rest of the bone, and the teeth are all set in a cluster upon the head. The huchen (*Hucho hucho*) of the Danube is a fine fish, sometimes approaching the dimensions of Atlantic salmon, but not migrating to the sea. It was formerly classed as a char, owing to the shaft of the vomer being toothless, and the teeth being confined to the fore-part, which, as in the char, is marked off by a transverse groove; but these teeth, instead of being set in a cluster, are arranged in a single, regular rank, which has been held to constitute the hucho as a distinct group or subgenus.

The true chars are further differentiated from other salmonoid fish by the brilliant scarlet and orange hues which, usually more or less present on the flanks and belly throughout the year, become more intense on the approach of the spawning season.

Of the huchen we have as yet no experience in Great Britain as a sporting fish. They are easily reared in captivity; Mr A. N. Gilbey having obtained fertile spawn from those bred in his hatchery at Denham Fishery, Lord Desborough turned a number of yearlings into the upper waters of the Thames in 1906, but no results have been reported by anglers so far. Should this powerful fish become established in that river, there is probably lively experience in store for roach and barbel fishers with light tackle; for it is well spoken of by those who have caught it in its native waters as a desperate hard fighter, taking fly or bait as freely as do salmon and trout.

Now, while I accept, were it only for convenience, the generic distinction assigned to *Salmo*, *Salvelinus* and *Hucho*, I shall have something to say presently in explanation of my inability to recognize more than a single British species of char.

The true chars are distributed in a remarkable manner through the northern hemisphere. Abounding in certain sheets of water, usually at a high elevation, they are absent from others of the same character. They are usually lake-dwellers, though in Norway the northern char (*S. alpinus*) inhabits the more northerly rivers, in some of which they have acquired or retained the seasonal sea-going habit. The beautiful brook trout of North America also is a char (*Salvelinus fontinalis*), and bright were the hopes entertained about it when it was introduced some years ago as a most desirable addition to the list of British sporting fishes. It was reared by tens of thousands in hatcheries and distributed so widely that I suppose there is hardly a county in England or Scotland where some attempt was not made to establish these fish in lakes, ponds and streams. The result, so far as I have heard, has been uniformly in accord with my own experience. The young fish grow bravely for a year or so after they are liberated; the lovely dark marbling on back and sides and the vermilion flames which overspread their flanks towards the end of the summer, combined with the perfect symmetry of their shapely bodies and small heads, quite eclipse the beauty of our native trout and make them appear almost dowdy in comparison. Moreover, from the angler's point of view, the *fontinalis* has this advantage over both grayling and rainbow trout, that its season corresponds with those of *Salmo fario*, so that, like that species, it is in the best condition during the summer months. But all these signal merits are cancelled, so far as British anglers are concerned, by the refusal of the American brook trout to accept letters of naturalization in the waters of the United Kingdom. Readers may

weary of one who writes much in the first person, and to do so is destructive of all grace in literature; but, after all, in dealing with facts, one can speak with more confidence upon matter within his own experience than he can upon mere hearsay. That may serve, I hope, as an excuse for describing in a few words my personal experience with *S. fontinalis*. There are two lakes on my property wherein, owing to the absence of pike, there is good store of trout. Into one of these, a basin about one-third of a mile in length, were turned some years ago one hundred yearling *fontinalis*. Although the lake is fished very constantly with fly (I suppose that between April 15 and September 15 the boat is out with anglers on an average of at least three days a week), I never heard that a single *fontinalis* was recaptured. It was surmised that they had made their escape down the burn which connects the lake with the sea about half a mile distant.

The other lake is a very small one, only about five acres in extent and, being fed by the springs, there is hardly any spawning ground for trout, and the stock has to be replenished each year by turning in yearlings or two-year-olds. Food is exceedingly abundant and common trout grow fast to a large size. The outlet is closed by an iron grating. Into this lake also one hundred yearling *fontinalis* were turned. The angling here is reserved for myself and a few personal friends. The year after these fish were released, I caught a lovely one weighing about ¾ lb., and high was my expectation of sport when another year should have added to the stature of his fellows. Not one of those fellows ever came to hand. What became of them no one knows. They could not escape from the loch, for the exit was barred; if they had died, surely some of their bodies would have been washed ashore. All we know is that they disappeared.

The experience of others who have turned these American char into streams has been similar. They will not abide in British waters, and must be dismissed with a sigh from the list of British game fishes.

British char possess far more interest for the gourmet and the zoologist than for the fly-fisher—for the gourmet, because of the exquisite delicacy of flavour in these fish when taken in the proper season—for the zoologist, because of the suggestive irregularity of their distribution. Being more impatient of warmth than trout, char live and feed in deep water; and although bumble-clocks and winged ants do tempt them to the surface, and at times, in some lakes, they cruise about in shoals, it is not worth anybody's while to lay his account for a day's fly-fishing for char. A brace or two of these lovely fish in a good basket of trout may be considered a fair catch,

even in a lake containing thousands of char. Lakes, however, vary in this respect. I believe that small char are pretty frequently taken with fly in Loch Doon, Ayrshire, and in Hawes Water, Cumberland, while large baskets are sometimes filled by worm-fishers in the Welsh lynns.

Now as to the question of classification. In 1866 Dr Günther distinguished five separate species of British char, and this number has been multiplied to fifteen by the latest authority, Mr C. Tate Regan, who, like Dr Günther, has enjoyed the advantage of studying the question as an official in the Natural History Department of the British Museum.

> "I am quite aware," writes Mr Tate Regan, "that some authors contend that there is only one species of char in our islands, whilst some would not even recognize the various forms as distinct races. Certainly our species of char are recent species and geographical species; they are of quite another nature from widely distributed forms such as the pike or roach, which have probably persisted unchanged during the whole of the time that the evolution of the *Salvelini* has proceeded. Nevertheless, they differ from each other in characters which are used to define species in other groups, and which may, therefore, be regarded as specific."*

The definition of species must always be a difficult problem, and I submit with much diffidence the considerations which prevent me yielding assent to Mr Tate Regan's classification of British char, founded as it is upon variations which have not been proved to be permanent. Pike, roach, perch and other fish which retain a uniformity of structure and appearance, belong to orders more highly organized than the *Salmonidæ*, which are peculiarly plastic and susceptible to the influence of environment. There is far greater external difference between trout (*S. fario*) from different waters, and even between trout taken from different parts of the same lake, than exists between the varieties of char which it is sought to recognize as species. No British fish, except the *Coregoni*, a branch of the salmon family, has been so long and so severely segregated as the char. The presence of this fish in its several varieties in those lakes where it is found probably dates from that remote period (Mr Tate Regan suggests nearly 100,000 years), when the last glacial period was drawing to a close and the ice-sheet was gradually receding northwards. The char, being an arctic or sub-arctic salmonoid, inhabited the waters flowing from the melting ice-field and collecting

*The Freshwater Fishes of the British Isles, by C. Tate Regan, 1911, p. 77.

in lakes. Many of these lakes have disappeared; others have lost their char population owing to a variety of causes, such as high temperature, the intrusion of pike or, as in Ullswater, mineral pollution. In course of time, char became restricted in Britain and Ireland to comparatively few lacustrine colonies, totally isolated and debarred from intercourse from each other. It would be strange, indeed, if one of these colonies, occupying for tens of thousands of years a mountain lake in Wales, did not develop some variation in colour, form and even structure from fish of a common ancestry confined for a like period in a mountain lake of the Scottish Highlands and from others dwelling under very different climatic conditions in a lowland lake in Ireland.

So far, there is no difference between Mr Tate Regan and myself. We agree that a considerable variation exists between char of different colonies, and that these variations are constant within such colonies, thereby constituting a distinct race. But where I must part company with Mr Regan is in his assumption that these variations would persist if the char of different lakes were exposed to the same environment. Unless they did so persist through several generations, it is clear that prolonged isolation in colonies has not prevailed to establish separate species. Moreover his reasoning about char might be more convincing had he not pursued a converse line of argument in regard to trout; classing all forms of British freshwater trout as "pertaining to one variable species," and accounting for the presence of trout in all the waters of the Hebrides, Orkney and Shetland Islands, where no other freshwater fishes —roach, perch, etc.—are found, by the hypothesis that these trout "have been derived from the sea-trout, which have lost their migratory instinct in different places and at different times."*

Owing to the deep-water habits of the char, it would be difficult, if not impossible, to demonstrate by experiment whether a Welsh *torgoch* reared in Windermere would transmit to its posterity permanent features distinguishing them from the native char of that lake; but the burden of proof surely lies upon those ichthyologists who proclaim the Welsh race to be a species distinct from the Windermere race. Having seen repeatedly how rapidly trout alter their appearance under the influence of conditions of soil, water-area and food, and how soon those that are brought

**Freshwater Fishes of the British Isles*, p. 55–57. I have expressed elsewhere (see p. 7 *n.* ante) my belief that both salmon and trout are natives of freshwater which have acquired the sea-going habit, just as British brook-trout, when acclimatized in New Zealand, acquire it. Apart from other considerations, this seems far more probable than that trout which had acquired the habit of visiting the abundant food supply in the sea should ever relinquish it.

from afar assimilate in appearance and average size to the variety native to the lake in which the strangers have been placed, I cannot but think that char would show similar susceptibility to environment. Nor do I see any reason to reject the conclusion come to by Agassiz when, in 1834, he pronounced all British forms of char to be mere variants of the *Ombre chevalier* of the Lake of Geneva (*Salmo umbla*, Linn.). "Naturalists," he said, "have especially attached themselves to the form of the head and the arrangement of the colours; but these two particulars are much too variable to supply precise characters; as to the variations in colour we may say they are infinite."* Yarrell adopted this view in his second and third editions; it has been confirmed by Dr Francis Day† and, I think, by all subsequent writers who are careful to check museum research by observation of living creatures in their native haunts. Such observation leads to the conclusion that, while British char as a species are as subject to variation as common trout, there is less variation among the char inhabiting any one lake than there is among the trout in the same lake, because char, feeding and living in deep water, come less under the influence of light and variation of temperature than trout, which live and feed chiefly in comparatively shallow water. But between char of different lakes there is generally a well-marked distinction. "The char of Hawes Water, which is known to feed a good deal on insects, is a small and slender fish in comparison with the char of Windermere, which feeds more at the bottom and has a less precarious supply, especially of *Squillæ*, which abound in that lake. The one takes the artificial fly freely; the other—that of Windermere—is rarely so tempted and seldom caught, except by trolling with the minnow. In short, so various are they that in no two lakes do they perfectly agree, either in their average size, form, colouring, or even in their habits."‡

In general appearance char closely resemble trout; but they are distinguished by their peculiar autumnal colouration. In some varieties this appears in summer as a rosy flush, deepening on the approach of the spawning season (which corresponds with that of trout) to a vermilion or orange-red hue, differing in depth and brilliancy according to sex and variety.

The distribution of char has always had a peculiar fascination for me. It takes one back to an era when the surface of our land, deeply ploughed and severely planed by the moving ice-mass, at length lay bare to sun and rain, and was becoming clothed with vegetation.

British Association Report, 1834, p. 619. †*British and Irish Salmonidæ*, p. 231. ‡Dr J. Davy, in 1857.

There are upwards of two hundred lochs, great and small, in the uplands of Galloway, yet char are found in only three of these, viz., Loch Doon, Loch Dungeon and Loch Grannoch. Of course char may have——nay, certainly have—been introduced by man to certain waters where they are not indigenous, as happened to be proved to me in a singular manner. Loch Ossian lies at a height of 1,270 feet above the sea, in the heart of Corrour Forest, Inverness-shire. One summer evening the ladies brought down tea from the lodge to regale the men of the party withal. One of these had been fishing in the loch, and turned out the contents of his basket, consisting of a great number of small trout. In looking over these my eye fell upon a char, and then I saw another. I was greatly interested, not to say excited, because there was no record of char in Loch Ossian or the other lochs connected with it.* The two fish were taken home and carefully bestowed in spirit to be despatched next day to Mr Boulenger of the British Museum. But in the morning my host, Sir John Stirling Maxwell, had an interview with his head stalker and asked him whether he had ever seen or heard of char in Loch Ossian. "Never," was the reply, "till Sir Herbert put some there five years ago." It seems that I had sent one hundred yearling char to be turned into the loch, but the circumstance had totally disappeared from my memory; so that, if Sir John had changed his servants in the interim, these char would have been proclaimed as indigenous in Loch Ossian, and possibly might have developed enough variation to be recognized by some naturalists as a new species.

In Great Britain the char is found in various lakes between the limits of Snowdon on the south, and the Orkneys on the north. I am not aware that it has been found in the Shetland Islands; but it has been reported from North Uist in the Hebrides.† Many of the Sutherland and Caithness lochs contain char; also Loch Tay, Loch Assynt, Loch Rannoch and other lakes in central Scotland.‡ In southern Scotland I can indicate only Loch Doon in south Ayrshire and Lochs Grannoch and Dungeon in the Stewarty of Kircudbright as inhabited by char, though it is certain that they once abounded in Loch Leven, whence they disappeared after the area of the lake had been reduced by drainage works in 1830, from 4,312 acres to 3,543 acres, and its depth diminished by 4½ feet.

*Char abound in Loch Treig, which lies parallel with Loch Ossian, but is separated from it by Carn Dearg (3,433 feet) and Beenin-na-lap (3,066 feet), both lakes ultimately draining into the Spean and so into the Lochy river.

†Day's *British and Irish Salmonidæ*, p. 245. Day also records char in Loch Inch, *Wigtownshire*; but that is an error for Loch Insch in Strathspey.

‡*The English Lake District Fisheries*, by John Watson, p. 206.

CHAR

In England these fish are found only in the Cumberland and Westmorland lake district, Windermere being the most productive lake, in which they have been taken up to 2¼ lb. in weight. The largest recorded as caught by angling weighed 1 lb. 6 oz.* In North Wales there are about half a dozen lakes in the Snowdon district containing char.

In Ireland char are very widely distributed from Donegal to Kerry, and it is remarkable that in that island they are by no means confined to deep water, appearing to be quite at home in the small bog loughs of Innishowen; but they are said to have disappeared from Lough Neagh, the largest sheet of fresh water in the United Kingdom.

Interesting and beautiful as are all varieties of char, and excellent as a well-cooked dish when fresh, most people have made their acquaintance only in a potted state, which gives no proper notion of their delicacy of flavour. From the angler's point of view, as has been said above, they have not much merit. In the English lake district a considerable number are taken on a spinning-bait sunk to great depths on a plumb line, and Mr John Watson has recorded how a certain local angler took seventy char out of Gaits Water, his bait being a grub or gentle which he cast as a fly, let it sink, and then drew it through the water with a jerking movement.† Char have also been taken in fair numbers with a worm;‡ but none of these methods present any attraction to the honest angler, and the bulk of the annual catch falls to the netsman. That this is considerable may be judged from the return given by Mr John Watson from Windermere alone, viz., 23,589 lb. of char in six seasons, 1893-1898, being an average of 3,965 lb. per annum, valued at 1s. per lb. As the fish do not average more than half a pound in weight, this represents the capture of about 8,000 char annually in Windermere. The English Salmon Fishery Commissioners having reported the serious depletion of char in the English and Welsh lakes owing to the practice of netting them during the spawning season, a close time extending from October 2 to February 1 inclusive was imposed by the Salmon Fisheries Act of 1873; since which time char are reported to have increased considerably in numbers. This close time applies only to English and Welsh waters.

**The English Lake District Fisheries*, by John Watson, p. 206. †*Ibid*, p. 207.

‡"In September, 1879, an angler with a worm bait captured in one evening 23 lb. weight of char [in Llanberis Lake, North Wales]; and as soon as the news got abroad, many others took to angling for these fish, and all had good sport . . . Some days hundreds of quarrymen might be seen fishing . . . while as much as 45 lb. a day has fallen to the share of one rod." (Day's *British and Irish Salmonidæ*, p. 234.)

THE GRAYLING

THYMALLUS VULGARIS

By the RIGHT HON. SIR HERBERT MAXWELL, BART.

IT has been said, and justly said, that no man should presume to write upon salmon fishing until he has accounted for at least a dozen salmon for every year of his life; nor about trout fishing until he has killed twelve times his own weight with artificial fly. Who am I, then, that I should venture to treat upon that truly game and lovely fish, the grayling? for although I shall never look again upon the waters from the sunny side of three-score, I cannot claim to have landed more than one hundred grayling, and most of those were unseasonable, being taken when trout fishing, in the months before *Thymallus* comes to its prime. That is the one defect in the character of a creature otherwise altogether charming—it has acquired the vulgar habit of timing its domestic economy so as to spawn simultaneously with chub and other coarse fish in the spring months; wherefore it does not recover fine condition until after harvest. For this reason the grayling has suffered from an unsympathetic legislature the grievous indignity of being classed among coarse fish under "Mundella's Act" of 1878, which provided a close time for freshwater fish (other than trout or char) from March 15 to June 15 inclusive.* But for this fact, that all through the shining months when the riverside is most attractive, the grayling is tarnished in hue and slimy to the touch—but for that, I say, there would be but one answer, and that an emphatic affirmative, to the question so often disputed, whether grayling should be suffered to exist in good trout streams. We may discuss that point presently: meanwhile—a few words about the natural history of the fish.

The grayling, or umber, as the older writers named it (*Thymallus vulgaris*), is a true salmonoid, wearing the distinctive badge of that clan —the little adipose fin; but it belongs to that group of salmonoids which differs from salmon and trout proper in the structure of the mouth, which is smaller and more suggestive of sucking or sipping than of snatching and biting; and in the teeth, which are smaller and feebler, absent from the tongue and the back of the vomer. The genus *Thymallus* is most

*This Act applies only to England and Wales, excepting parts of Norfolk and Suffolk, and certain fishery districts have been exempted from it by the exercise of powers conferred upon the Board of Agriculture and Fisheries.

nearly allied to that of *Coregonus*, of which about forty species, mostly lake-dwellers, have been recognized in the northern hemisphere, including the powan or gwyniad of Loch Lomond and some of the English and Welsh lakes, the pollan of Lough Neagh and some other Irish waters, the mysterious vendace of Lochmaben,* and the valuable white-fish, frost-fish, etc., of North America. *Thymallus*, however, has been separated from *Coregonus* in virtue of the long, many-rayed dorsal fin which distinguishes the five species of grayling. Moreover *Thymallus* differs from *Coregonus* in being a river-dweller, inhabiting clear-running streams, an important characteristic from the angler's point of view.

Yet is the grayling far more fastidious than the trout about the character of the stream in which it is content to dwell. In that respect the trout is more accommodating than any other fish known to me, adjusting not only its habits, but its size and colour, to the nature of its environment. There is no rivulet so insignificant, no river so great, no current so swift or so sluggish, in which trout will not establish a home. But the grayling will not abide where there are no deep, slow-running reaches. It comes out on the shallows only in April and May to shed its spawn; and although when so occupied it takes a floating fly only too freely, disturbing the equanimity of the trout fisher in his pursuit of more seasonable game, it is not worth catching at that season, even if it were legal to do so, which, as aforesaid, it is not—at least in England and Wales. I have seen grayling collect in early summer under the very lip of a weir or low fall in the Avon at Wilton; but the normal abode of this fish during the months when it is in prime—from September to February—is in fairly still, deep water. Grayling simply refuse to remain in any water to which they may be introduced unless this condition be fulfilled, as I learnt to my cost some years ago when I transported eighty of them from the Douglas Water, a tributary of the Clyde, and turned them into a trout stream on my own

*As I am frequently asked for particulars about the vendace, it may not be out of place to repeat here the information I obtained in 1904 from the late Mr Service, of Maxwelltown, an excellent naturalist. "The Vendace Club was still in existence in 1869, but was wound up in 1870 or 1871. No doubt the old minute books are still in the possession of Messrs John Henderson and Sons (late Sir W. Brown and J. Henderson), Dumfries, but buried amongst the *débris* of this old legal firm, as their cellars are chokeful of papers. The St Magdalene Vendace Club, an organization of a very decidedly democratic kind, ceased shortly before the more aristocratic society. After fishing the lochs for vendace in the usual way [with a seine net], they held a meeting for Border games, etc., and some thirty-five to forty years ago this was rather a big event. As for the present status of the vendace, I hear from time to time of small takes by net (the Lochmaben magistrates, I believe, give the requisite permission) of a dozen or maybe two dozen. It has always been a very unusual thing to take more than a very few dozen, big and wee fish all told. I have no reason to believe that this most interesting species is less numerous, or perhaps I should say more scarce, than ever it was." The wonder is that vendace should have survived at all in Lochmaben, which is a shallow, lowland sheet of water, swarming with pike.

estate. There are some deepish pools in this burn, which also feeds and traverses a milldam much frequented by goodly trout, and I had hopes that the requirements of *Thymallus* might there be satisfied. Not a bit of it! A few days later word was brought me that some strange fishes had been found floating belly-upwards in the harbour. These proved to be my poor grayling, which, thoroughly disapproving of the quarters provided for them, had made a clean bolt of it, and committed suicide in the salt water.

It is difficult—nay, impossible—to define the original limits of distribution of the grayling as a British fish, so completely have these been obscured by its importation into rivers where it was not indigenous. There is a tradition that it was brought to England by monkish pisciculturists; and no doubt we may owe its presence in some English waters to the industry and enterprise of mediæval celibates; but I incline to trace its presence in English waters to a far higher antiquity, namely, to that geological period when the Trent, the Yorkshire Ouse, the Wharfe and the rivers of East Anglia were tributaries of the mighty Rhine as it wound its way towards the Arctic Ocean through the vast plain now covered by the North Sea. It is in these easterly-flowing streams of Yorkshire and Derbyshire that we have most reason to regard the grayling as indigenous.

Nobody knew Yorkshire waters and their contents better than Mr T. E. Pritt who, in his "Book of the Grayling" (1888), wrote as follows: "With the exception of the Hodder, a tributary of the Ribble, and the Wenning, a tributary of the Lune, grayling are found in all the main rivers of Yorkshire, and in most of their larger tributaries." Now, as the Ribble and the Lune are the only rivers of Yorkshire and Derbyshire that flow to the west (the Mersey, which rises in the extreme south-west of Yorkshire, being now negligible as a fish-producing stream), grayling appear to be indigenous only in the eastern-flowing waters of these counties, in which case it seems probable that they trace their descent from a remote Rhenish ancestry. If they have disappeared from the Nen, the Ouse of Norfolk, and the other sluggish rivers of East Anglia, that is easily accounted for by the abundance of pike in those waters.

That opens the question why grayling do not appear to have ever been indigenous in the Thames system; for the general belief of geologists is that the Thames also was formerly a tributary of the Rhine. It is interesting to remember that the late Sir Andrew Ramsay expressed a different view in his "Physical Geology of Great Britain" (1863). He therein maintained that the Severn valley was one of the oldest in southern

England and that the secondary strata to the south-east of it dipped towards the west, causing the waters of the Thames valley to drain westward into the Severn valley. Then, after the Severn valley had been well established, these chalk and eocene beds received a slight tilt towards the east, perhaps in connexion with the earth-movement which caused the subsidence forming the North Sea and promoting the erosion of the Straits of Dover. This eastward tilt sufficed, in Sir Andrew Ramsay's opinion, to create a new watershed and a new river, the Thames, which scooped out its channel through the chalk and overlying eocene beds. This would account for the absence from the Thames and its tributaries of the grayling and the burbot, which the rivers of Yorkshire, Derbyshire and East Anglia derived from their former connexion with the Rhine. Having mentioned that remarkable fish, the burbot (*Lota vulgaris*) I must crave leave to drag it in to support my view of the original distribution of the grayling in Great Britain. It is a solitary species in the only genus of the *Gadidæ* or cod family inhabiting fresh water, and is widely distributed in the rivers of Europe, Asia and North America. Burbot, or eel-pout, are found in Britain only in the eastern-flowing rivers of Yorkshire and East Anglia, including the Trent and its inland tributaries.* It does not inhabit the Thames, though it has been held to have done so once on the strength of a statement in Leonard Mascall's "Booke of Fishing with Hooke and Line" (1590). The passage has been repeatedly quoted, without a most misleading printer's or reader's error being detected.

> "There is a kind of fish in Holand [that is, the south-eastern division of Lincolnshire] in the fennes beside Peterborrow, which they call a poult; they be like in making and greatness to a whiting, but of the cullour of a loch [loach]; they come forth of the fennes brookes into the rivers nigh there about, *as in Wandsworth river there are many of them.*"

This has been interpreted, not unnaturally, to mean the Wandle, which runs through Wandsworth into the Thames; but Mascall was treating only of the waters of the Fen district, and what he meant was not "Wandsworth" but "Wansford," a village on the Nen, about six miles west of Peterborough.

It is uncertain whether grayling are indigenous in the Itchen and Test. "There be many of these fishes," wrote Izaak Walton, "in the delicate

*The recorded capture of a single burbot in the Plym can only be explained as an escape from captivity.

river Dove, and in Trent, and some other smaller rivers, as that which runs by Salisbury "; but he does not mention it as inhabiting the Itchen, which he knew so well.

Grayling receive frequent mention in the earliest entries in the journals of the Houghton Fishing Club, which was founded in 1822, and still continues in possession of a long stretch of the Test near Stockbridge. The largest number killed in any one season by the members of the club was 198, in 1848, the average weight being 1 lb. 11 oz. In the same season they killed 179 trout averaging 1 lb. 13 oz. That may be compared with the season 1904, when only four grayling were killed, against 235 trout of an average weight of 2 lb.; but the comparison is vitiated by the immense number of trout which the club has been turning into its water for many years past, as well as by the disfavour with which grayling have come to be regarded by gentlemen who only fish in summer. It was resolved in 1904 to turn out 1,500 large trout annually from the club's stock ponds, and there is no record of any of the members visiting Stockbridge in autumn and winter, as they used to do, for grayling fishing. The great average weight of the trout taken is to be accounted for by the rule which prohibits the killing of any trout under 1½ lb. in weight. No account is made of the numerous trout under that weight which were landed and released.

The following entry in the "Houghton Club Chronicle" seems to indicate that there were no grayling in the Itchen eighty years ago:

> "19th November, 1830. Mr Dampier met me here on 15th inst. . . . Mr Garrett joined us on the 17th . . . the principal object of this meeting was to catch store grayling for Mr Paulet Mildmay, who was desirous of introducing them into the River Itchen. The fish rose well and afforded good sport. On the 18th thirteen brace and a half were sent off in tubs from Houghton Shallows, and ten brace reached the Itchen alive, many of them one pound weight. They were put into the Itchen at Shawford, below Winchester."

On the other hand it is recorded in the same journal as follows:

> "2nd June, 1873. Through the kindness of Mr Thomas Chamberlain of Cranbury Park, 17½ brace of grayling from the Itchen have been turned into the River [Test] above the town at the tail of the mill. Of these fish, twelve or thirteen weighed 2 lb. and upwards."

From the middle of the nineteenth century onwards, grayling have been distributed far and wide; in the Clyde, the Tweed and many other northern

rivers, they have multiplied prodigiously, so much so that measures have been taken in the Tweed to reduce their numbers by netting, in the belief that they devour the spawn of salmon and trout.*

The angling season for grayling is brief, for they are in their prime only from the middle of September to the middle of February.

A grayling in prime condition, say in the month of October, is of truly gallant appearance. In form it is peculiarly graceful and in colour changing according to the light, the scales reflecting purple rays shot with gold and silver. No idea of this fish's beauty can be obtained from the wretchedly coloured plate in Couch's "British Fishes," nor even from the better likeness given in Professor Smith's fine work on Scandinavian fishes. Neither of these writers has succeeded in getting artist and printer to do justice to the grayling's grace of form and colour, which are so conspicuously enhanced by the bold outline of the dorsal fin, which stands up like the lug sail of a fishing boat and is finely stained with violet. The best representation of an October grayling is the fine plate forming the frontispiece of Mr T. E. Pritt's "Book of the Grayling," reproduced from a drawing done by the author at the waterside.

Izaak Walton's statement that the grayling "grows not to the bigness of a trout, for the biggest of them do not usually exceed eighteen inches" may be taken as generally correct at this day, though subject to exceptions. Grayling greatly abound in the Douglas Water, a tributary of the Clyde, where their average weight is certainly greater than the little trouts that inhabit that stream. In the Hampshire rivers grayling weighing between 2 lb. and 3 lb. are far from uncommon. Referring again to the journal of the Houghton Fishing Club, which is the longest consecutive chronicle of angling extant, ranging for ninety years, 1822-1912, the following entry appears at the end of 1862:

"The fourth decade of the Club ended in 1862.

1823–1832	1,658 trout,	weighing	2,788 lb.,	average	1 lb. 10⅞ oz.
	1,087 grayling	,,	1,671 lb.	,,	1 lb. 8½ oz.
1833–1842	1,631 trout	,,	2,986 lb.	,,	1 lb. 13¼ oz.
	1,100 grayling	,,	1,805 lb.	,,	1 lb. 10¼ oz.
1843–1852	1,864 trout	,,	3,537 lb.	,,	1 lb. 14¼ oz.
	1,150 grayling	,,	2,000 lb.	,,	1 lb. 11¾ oz.
1853–1862	2,451 trout	,,	4,571 lb.	,,	1 lb. 13¾ oz.
	661 grayling	,,	1,161 lb.	,,	1 lb. 12 oz."

*The presence of grayling in the Clyde dates from 1855, when three dozen were brought from Rowsley in Derbyshire.

Of late years, while the number of grayling taken in this water has greatly diminished, partly, no doubt, owing to members of the Club not caring to go down to fish at Stourbridge in the autumn, the average weight of the grayling has been just about equal to that of trout:

1899	583 trout,	weighing	1,132 lb. 6 oz.,	average	just under	2 lb.
	37 grayling	,,	73 lb. 5 oz.	,,	,, ,,	2 lb.
1903	247 trout	,,	478½ lb.,	average	1 lb. 15 oz.	
	12 grayling	,,	24¾ lb.	,,	2 lb. 1 oz.	

On November 23, 1905, Mr Page and Mr A. N. Gilbey killed 13 grayling weighing 22 lb. 15 oz.

There is an incident recorded in this chronicle as having happened to the late Mr Martin Smith, which goes to confirm the impression of most anglers that grayling are not nearly so wary as trout:

> "28th April, 1890.—Mr Martin Smith killed a grayling of 3 lb. 10 oz., the largest recorded in the Club annals. He hooked it about midday at Broken Bridge; it broke his cast after he had played it for three or four minutes. At 2.30 he hooked the same fish, landed it and recovered his fly. The grayling was sent to the British Museum."

It may be observed that Mr Smith was transgressing the law in killing this fine fish during the statutory close-time; but the sad fact is that in the Stockbridge water, as in many other parts of the Hampshire rivers, grayling are regarded with ill-favour; trout-fishers give them but short shrift, believing them to be injurious to the trout by eating the spawn and taking too large a share of the natural provender in the river. Both allegations are founded upon fact; the first may be dismissed as of little moment, for if grayling eat trout-spawn, so do trout themselves and grayling-spawn also. Moreover, if more than five or ten per cent of the ova deposited by trout in each season were to become troutlets, the fishery would soon deteriorate and swarm with fingerlings. Of far greater moment is the other consideration—the tax which the presence of grayling imposes upon the common food supply. If a fishery, capable of sustaining in good condition one thousand trout averaging 1 lb. in weight be called upon to nourish one thousand grayling in addition, it follows that the trout must either deteriorate in size or condition, or diminish in number. Those who prefer to fish in summer will not incline to introduce grayling to their trout water, seeing that grayling do not come to their prime till summer is past.

THE GRAYLING

Like most other salmonoid fish, grayling observe no standard of dimension, their weight and size depending on the abundance of food. As shown above, the largest grayling taken during sixty-eight years by a member of the Stockbridge Club weighed 3 lb. 10 oz. when unseasonable. Dr Day has registered the capture of one weighing 5¼ lb. "in a trap at the top of the Camlet in Shropshire."* This was in the spring of 1887, and, if authentic, constitutes the record weight for British grayling; but one has to remember that few things require stricter verification than the dimensions of individual fish.

Izaak Walton's opinion that the grayling "is not so general a fish as the trout, nor—to me—so good to eat or to angle for," must have been founded upon grayling caught in summer. Perhaps he never tasted, because likely he never caught, an October grayling, for all his pages are redolent of mayblossom and the flower of beans; one cannot imagine him seeking the riverside when song birds are mute and the woodland is sere.

Hear him in "The Angler's Wish":

I in these flowery meads would be:
These crystal streams should solace me:
To whose harmonious bubbling noise
I with my angle would rejoice:
Sit here and see the turtle-dove
Court his chaste mate to acts of love.

Or, on that bank feel the west wind
Breathe health and plenty: please my mind
To see sweet dew-drops kiss these flowers,
And then washed off by April showers
. . . . . .
Or, with my Bryan and a book,
Loiter long days by Shawford brook.

No wonder that Walton thought poorly of the esculent quality of grayling if he judged only by those caught when he could command the accessory delights of "flowery meads" and "sweet dew-drops," for in its season of courtship this dainty fish coincides with the turtle-dove. Izaak, who was more of a poet than a naturalist, seems not to have been aware of this, for he writes of the grayling as "a fish that lurks close all winter, but is very pleasant and jolly after mid-April [when it is spawning] and in May and in the hot months." To my taste the firmly flaked, white flesh

*British and Irish Salmonidæ, p. 286.

of a grayling at its prime is to be far desired before that of an Itchen trout, salmon-red though that be.

Walton's other point—the inferior combative powers of the grayling—may be conceded; the resolute runs and determined tussling of a good trout put to shame the rolling and tumbling tactics of *Thymallus*. "Too often," observed Francis Francis, "grayling behave [when hooked] as a trout might be imagined to do if he had been drinking success to the Mayfly rather too freely."* Nevertheless, these tactics prove effectual oftener than the trout's more chivalrous play, by reason of the softer nature of the grayling's mouth, whence a small hook is very apt to part when the fish is walloping about on the surface.

To the credit side of the grayling's account the fly-fisher may set the fact that this fish may be induced to rise even when there is no natural fly on the water. In the crystal-clear streams of Hants and Herts it is idle to cast over trout when they are not looking out for surface food. Before the rise begins and after it is over you may lean your rod against a rail and turn to botany, bird's nesting, or, as Richard Franck did use, to controversial theology, for you will receive no attention from any except fingerling trout. But in a water well stocked with grayling there is always a chance for one fishing on the "chuck-and-chance-it" system—casting downstream with wet fly. Of course, when grayling are "rising to themselves," as fishermen term it, the fastidious angler will resort to the more artistic style of putting a dry fly over the rising fish; but, except in a bright sun and flat calm, he will probably not do as much execution as he would by the older method. When a chalk-stream trout means to make a repast of winged fare, he chooses a position conveniently near the surface, whence he may suck down floating flies with a minimum of effort. Not so the grayling, which always lies near the bottom, and enjoys the power of rising swiftly from a considerable depth to seize or inspect anything that attracts his attention on the surface.

As to the flies that may be offered to grayling with most chance of acceptance, there seems to be a general agreement among experts that red has a peculiar attraction for them. While grayling will take imitations of natural flies when these happen to be about, there are also a number of fancy patterns which have established their reputation as killers. In preparing his "Book of the Grayling," Mr Pritt invited each of four expert grayling-fishers to send him three favourite patterns, and these he gave

**Book on Angling*, 2nd Ed., p. 278.

in a coloured plate, together with three of his own, remarking that "if the fly-fisher for grayling fails to rise fish in any river of England with the five casts here quoted, nothing short of an earthquake will bring them up." It is to be noted that these flies are intended to be fished wet; but Mr Pritt, whose experience has been gained chiefly in the rivers of Yorkshire and Derbyshire, adds, "I usually have two or three of the winged patterns dressed as floaters, in order to use them, if need be, according to the system of dry-fly fishing practised in the south."

Mr Pritt's own flies are dressed as follows:

Crimson Tag.—Body rather full, of bright green peacock's herl. Hackle at head, the bronze feather from a golden plover's breast. Tag, crimson wool. Hook No. 1.

Dark Needle.—Body, quill; hackle at head, the darkest feather from a brown owl's wing-covert. Hook No. 0.

Tog Black.—Wing, from a bullfinch's pen feather; shoulder hackle from a starling's neck; body, dark purple silk, ribbed with black fibre of heron's herl. Hook No. 0.

Except for its vernal habit of spawning and its preference for deep water and gently flowing streams, the general tenor of a grayling's life is much the same as a brook-trout's. Like the trout, it is essentially predacious, and although the purse-like contour of its fleshy lips suggests a diet partly vegetarian like a carp's, Linnæus did not display his wonted acumen when he accepted the current explanation of the thyme-like odour of this fish (whence its name *Thymallus*) as arising from its browsing on water-thyme. The grayling has none of those molar-like pharyngeal teeth wherewith the carp chews vegetable growths, and although the armature of its jaws is minute compared with that of the trout, it is very effective and serves for the capture of larvæ, flies, small fish and such like, which form its staple diet. Flies, natural and artificial, worms and gentles are therefore the lures employed in grayling fishing, and although nobody ought to offer this elegant fish the indignity of setting out to catch it with a minnow, grayling are often caught on a spinning bait by fishers in pursuit of trout.

I have read that the most deadly way of taking grayling is with an artificial bait called the grasshopper, consisting of a hook lapped with lead, over which is wound green and yellow Berlin wool. This is cast into any likely deep water, allowed to sink and drawn up with a jerking motion. Not having seen this method practised, and being devoid of the faintest

desire to catch grayling in this fashion, I content myself by remarking that it has been prohibited on those rivers where grayling are rightly valued as a sporting and free-rising fish.

It is claimed by those who practise it that worm-fishing for grayling is a more delicate and difficult art than one who, like myself, has never attempted it might suppose. Certainly the conditions under which this branch of angling gives the best results are such as are prohibitive of any other, for we are assured that there is no frost so severe and no water so low and clear as to deter grayling from taking a worm daintily brought to its notice by means of a very light float. I have no reason to doubt it, but I have no intention of putting it to the test of experience; for although I have had many a good day's sport with early salmon when I had to break the ice away from the rings on my rod, and suck it off the fly as it froze every few minutes, there are bounds to my ardour when it comes to bait-fishing with a float in mid-winter. I feel of one mind with Epiton in J. Lilly's "Endimion" (1591) when he says, "O 'tis a stately occupation to stand foure houres in a colde morning and to have his nose bitten with frost before his baite be mumbled with a fish!"

SALMON AND TROUT FISHING IN CANADA

By E. T. D. CHAMBERS.

FROM the easterly limits of Nova Scotia and Labrador to where the waves of the Pacific wash the far westerly coast line of British Columbia, the waters of the Dominion of Canada swarm with the choicest of the American *Salmonidæ*. Nowhere are more superb game fish to be found than the salmon of the Atlantic coastal streams of British North America, the ouananiche of North-eastern Canada, the sea trout of the estuaries and the brilliantly marked, so-called "trout of the fountain"—*Salvelinus fontinalis*—which is really not a trout at all, but the most beautiful and probably the most game of all the chars.

In Eastern Canada the brook trout and in Western Canada the rainbow and the steelheads are so abundant as to be accessible to all classes and degrees of anglers. Salmon fishing, as in the British Isles, is somewhat more of a luxury, but there are farmers in some of the eastern provinces who own their own salmon pools in fee simple, and who know how to fish them too.

The eastern American salmon is identical with *Salmo salar* of Europe, frequently attaining the same size, and, generally speaking, evincing the same habits and disposition as its trans-Atlantic congener. Unlike the latter, however, the Atlantic salmon of North America has seldom, if ever, been known to take any other lure than the artificial fly. I have no knowledge of the prawn having been offered to an eastern Canadian salmon, but I have tried them over and over again with both worms and spinning bait, without any success, and have yet to hear of any that have taken either of such baits.

From the waters of the United States the Atlantic salmon has almost entirely disappeared, though in the early years of European settlement in America it was abundant as far south as the Hudson and the Connecticut. A few fish still ascend the St Croix, which forms a part of the dividing line between New Brunswick and Maine, and some are also found in the Penobscot, another river of Maine.

The salmon-fishing season is much shorter in Canada than in Europe. The earliest salmon fishing in North America is in Nova Scotia. In the

Gold River, which flows into Chester Bay, forty miles from Halifax, the fish will sometimes take the fly in the first week of April, even before all the snow water has left the river.* The rivers north-east of Halifax have no run of salmon worthy of the name until well on in the month of May, and in the Atlantic rivers of New Brunswick salmon do not rise to the fly before June. The close season commences on September 16, but only in a very few rivers do salmon take the fly after August 15.

An occasional salmon is taken early in the season in the Dunk, a river of Prince Edward Island, flowing into Bedeque Bay, not far from Summerside, but the island province can scarcely be said to have any salmon fishing worthy of the name.

In the long, narrow peninsula of Nova Scotia, with its main watershed running nearly from end to end, the rivers are necessarily short. Cape Breton Island, which lies at its north-eastern extremity, offers some of the best salmon fishing, and the Margaree is the favourite stream. It may be reached by a drive of thirty-five miles from Orangedale—a station on the Intercolonial railway. Other Cape Breton rivers in which salmon are found are the Mira, Middle and Denys rivers, while the St Mary's, on the mainland, which is considered a fair river, can be reached either from Antigonish—a railway station—or from the eastern shore.

The Medway, which, like the Mersey, flows into the Atlantic, not far from Liverpool, and about midway between Halifax and the south-western extremity of the province, would be an excellent salmon river but for the excessive netting to which it is subjected. In one of its best pools, in the spring of 1911, an angler had been casting for about half an hour, when a farmer came along, drew his net in the pool and took out two fine salmon. Yet in the same pool, a little later, the angler rose and killed a fresh run fish weighing nearly thirteen pounds.

The East River, flowing into Sheet Harbour, some seventy-five miles east of Halifax, on the Atlantic coastline, occasionally offers good salmon fishing. In one of its pools an angler, with a seven-ounce trout rod and only a hundred feet of line on his reel, had the good luck to kill, in one day, two salmon and a grilse, the largest fish weighing twelve pounds and taking an hour and twenty-five minutes to land. The fisherman was compelled, more than once, to follow his fish for a considerable distance in something like three feet of water.

*The best spring salmon fishing in the Scottish Highlands and in Norway is obtained while the snow is running off.—ED.

The Indian and the Ingram rivers are within reasonable distance of Halifax, and other salmon fishing can usually be had within a few miles of Truro and Wallace, both of which are well-known stations of the Intercolonial railway.

By far the best salmon fishing is to be had in the provinces of New Brunswick and Quebec. Forming for some distance the boundary between the two provinces is the far-famed Restigouche, the best pools of which are fished by American millionaires. The Restigouche Salmon Club, having its headquarters at " the meeting of the waters," in the picturesque Matapedia valley, close to the junction of the Matapedia and Restigouche rivers, is the owner of riparian fishing rights and leases of salmon fishing privileges, worth at least a million dollars [£200,000].

Nearly every reach of water in America on which there is any possible chance of killing a salmon with a fly is now either owned in fee simple, or leased to anglers. The competition among fishermen in recent years for good salmon water has been intense, and the price of privileges has consequently reached a very high level. The number of wealthy Canadians and Americans on the look out for salmon fishing is rapidly increasing, and the extent of available water is diminishing.

For a portion of the fishing in the Grand Cascapedia, which flows into the Baie des Chaleurs, the Cascapedia Salmon Club pays an annual rental of 12,000 dollars [£2,400] to the government of the province of Quebec.

Mr James J. Hill, the American railway magnate, pays over 4,000 dollars [£800] a year for the fishing privileges of the St John River on the coast of the Canadian Labrador. Mr Hill fishes this river with three or four friends for about three weeks each year, making the journey from Quebec, which occupies about two days, by steam yacht. As in the case of the Moisie and the Natashquan and some other rivers flowing into the Gulf of St Lawrence from the north, the St John River is very deep for its lower eight or ten miles. The fishing above these lower miles of dead water is excellent, and Mr Hill and his party have sometimes over six hundred salmon to their credit in a single season. Neither in the St John nor in the Natashquan, however, do the fish run so large as in the Moisie, which is by far the best and most valuable river on the north shore of the Gulf. There has been much litigation over the ownership of the fishing rights in the Moisie, but Mr Ivers W. Adams, of Boston, who some years ago purchased the rights of the riparian owners, has now come to terms with the government of the province of Quebec by purchasing from it the bed of the

river, including all its claims to the fishing rights. The average weight of the salmon of the Moisie taken on the fly is in the vicinity of nineteen pounds. Many fish of thirty to forty pounds weight, and some exceeding forty, being taken by Mr Adams and his friends every season. The value of the Moisie fly-fishing has been variously estimated at from one to two hundred thousand dollars [£20,000 to £40,000]. Ten miles from its mouth, opposite the main camp, it is so wide that three boats, each with an angler and his guides on board, are able to anchor and to fish abreast of each other, without in the least interfering with one another.

The New England anglers, who fish the Natashquan, which flows into the Gulf of St Lawrence to the east of Anticosti Island, sometimes find it easier to reach their river, five hundred miles below Quebec, by steaming around from Boston in a specially chartered yacht. E. A. Sothern, the Duke of Beaufort, and W. J. Florence, the actor, reached the mouth of this river on one occasion by paying the captain of the ocean steamer upon which they had sailed from Europe to drop them off in a boat with their fishing paraphernalia, just opposite the Natashquan. The salmon of this river do not run particularly large, but they are very plentiful and rise freely to the fly. The Natashquan itself is a very sporting river, the best pools being in the vicinity of heavy falls and dangerous rapids, in which some lives have already been lost. Here, perhaps, better than on any other Canadian river, may be enjoyed the sight of myriads of salmon essaying the leaps of the waterfalls, many of them five to six feet in height, between the different ledges or pools in the rocks. The fishing in the Natashquan, like that in the St John, is leased from the government of the province of Quebec. This government has still a number of excellent rivers to lease to salmon fishermen, but they are not very accessible to civilization, most of them being situated but a comparatively short distance west of the Straits of Belle Isle. Some of them may be reached by steamer from Newfoundland, and all of them by steam yacht or sailing vessel from Gaspé or Quebec. Some of these rivers are very large and well stocked with salmon. The sea trout fishing is exceedingly good in the estuaries of the majority of these rivers, and in those of many other Canadian salmon rivers as well.

In some respects, the Grand Cascapedia is the most remarkable of Canadian rivers. It has been fished by King George and by almost all Canada's Governors-General of recent years. In what is still called the

Princess Pool in this river, the Princess Louise, during the Governor-Generalship of the Marquess of Lorne, killed a salmon of fifty-two pounds. The record fish of the Cascapedia with rod and line is one of fifty-four pounds, taken a few years ago by Mr R. G. Dun, of New York.

The Grand River of Gaspé, which is privately owned, and which, like the Cascapedia, flows into the Baie des Chaleurs, is also noted for the large size of its fish, and very much resembles the Cascapedia in character, though not so large a river. Its bed is so changeable that birch-bark canoes are discarded by its fishermen for the stouter and more substantial craft, built of wood, and known as the Gaspé canoe, from the place of its manufacture. The two Micmac Indian guides, one in the bow, the other in the stern, are supplied with both paddles and poles. After ascending above tidal water, the passage of the canoe, as in several other Canadian salmon rivers, is through an avenue of forest-clad mountains, sloping to the margin of the water. This water comes from countless springs, and is so perfectly filtered by the gravelly nature of the riverbed and surrounding country that it is clear as crystal, every pebble at the bottom of the stream being as clearly visible at a depth of forty feet of water as if only separated from us by a sheet of glass. Here and there are stretches of comparatively shallow and rapid water, where the river widens out to a considerable breadth, alternating with deep holes which appear to have been hollowed out of the channel by ice. Quite abruptly, the bed of the river, which was nearly fifty feet below us a moment ago, now rubs against the bottom of the canoe, and the Indians have dropped the paddles, and, standing up in either end of the canoe, are forcing it against the current with all their might, their long, iron-pointed poles stuck into the gravel or prised against the rocks of the shallow channel. So the journey goes; the Indians sometimes wading through the shallow passes, where the canoes scrape the bottom, and then driving the somewhat heavy craft directly up picturesque rapids of half a mile or so in length, where the water is carded by angry rocks into white and fleecy foam, and where, by dint of muscular effort and judicious employment of brain and pole, the guides succeed in fairly forcing the canoes up perpendicular falls of water over the large scattered rocks of the rapids. At every turn of the constantly winding river new beauties of scenery are revealed, and often a salmon pool is passed, where the water is so clear that the fish may be seen to dart away as the canoe passes almost over them.

On many of the north shore streams, and also upon some of those

on the south shore—the Restigouche, for instance—the water is not nearly so clear, and the fish are only distinguishable in the pools with great difficulty, and sometimes not at all.

In the Grand Pool of the Grand River it is quite possible to count fifty to seventy salmon at one time. They will not always rise to the fly, but when one is hooked here the sport is fast and furious. There are other remarkable pools in the river. One is so wide that it is impossible to cast from the sandy beach on one side to the deep rapid water on the other in which the salmon lie. The guides pole the canoe containing the angler across the stream, a little above the pool so as not to disturb it. The bank on the farther shore is too steep to land upon, and is also overhung with trees. One of the guides holds the canoe against a tree on the bank, while the angler lets his fly drop down with the rapid current, for the overhanging trees prevent him from casting. When a salmon takes the fly in the current in question, which very often happens, a battle royal is assured, provided the fish is well hooked. The canoe is let loose from the shore, both Indians struggle with might and main to urge it up against the rapid and to get it across to the sandy beach without permitting it to drift down upon the fish and giving it a slack line. Notwithstanding that there is a considerable length of sandy beach, it is often necessary to take again to the canoe and follow a hooked fish before it can be killed.

The better part of the pools in the Godbout, on the north shore of the Gulf of St Lawrence, are private property, and in four weeks a party of anglers killed 509 fish in them. One angler is known to have killed over forty salmon in one day in this river, though an average of one or two per day satisfies most anglers, and three, four and five per day is considered excellent fishing. Three fish, weighing respectively thirteen, fifteen and seventeen pounds, killed one morning before breakfast on the Trinity River, in the summer of 1897, remain in memory of my most enjoyable hour and three-quarters of sport with rod and line, in a good many years of angling. What burnished silver flashing and dazzling in the sunlight could compare with the opalescent hues of the smallest of the trio, fresh from the sea, and what racehorse ever more valiantly struggled to pass the winning post than this salmon did to return to his salt-water home, when finding himself impaled by the barb concealed in the gay deceit which had lured him to his doom? Only the foresight of my half-breed guides in having the canoe ready to receive me at the foot of the pool

enabled me to save both fish and tackle, for, from the moment that he felt the hook, he never paused in his mad rush till he had led us a chase of over half a mile.

The limitations of space prevent me from describing a number of other experiences with Canadian salmon, and some of the big catches of the far-famed Restigouche; a two-hour fight with a big foul-hooked fish; and the sport of some of the Cascapedia fishermen in killing heavy fish by moonlight on a large Silver Doctor or Silver Gray, the size of an enormous grasshopper.

Some of the New Brunswick salmon rivers, like those of Quebec, are worthy of a chapter to themselves. The Restigouche Salmon Club pays the government of that province over 11,000 dollars [£2,200] a year for portions of the fishing on the New Brunswick side of the Restigouche River, and some of the pools included in these leases are amongst the finest in America. The Miramichi, the Tobique and the Nepisiguit are all magnificent salmon streams, though the fish in the last-mentioned, which flows into the Baie des Chaleurs at Bathurst, are not particularly large. The scenery is superb, and the character of the different falls, below which the best of the fishing is usually to be had, gives considerable life to the sport. A good deal of the fishing in both the Miramichi and the Nepisiguit is under lease from the government, but there is also considerable open fishing, and some to be had from the owners, for portions of the season. Much of the fishing in the south-west branch of the Miramichi is free, and information regarding it can be had from the fishery department at Fredericton, N.B. Mr John Mowatt, of Campbellton, owns certain salmon pools on the Restigouche, which he leases to anglers by the day. Some of the fish taken here are quite large. Fair salmon fishing can also be had by visiting anglers on the Charlo River, which is easily reached from Campbellton. The fishing in the Nepisiguit can be had on application to either Mr Gilbert or Mr Henry Bishop, of Bathurst, N.B. The open salmon fishing in the Labrador rivers in the province of Quebec has already been mentioned. The proprietor of Murphy's hotel at Gaspé Basin, in the same province, has also good salmon fishing for his guests in both the St John and the York rivers.

When salmon pools are too far away and the necessary leisure to reach and fully enjoy them is wanting, I find the best substitute for salmon fishing when I have set up my trout rod by the roaring rapids of the Grand Discharge of Lake St John, and dropped my cast of flies upon the oily,

foam-flecked water eddying round the rocks or birch-bark canoe, when the ouananiche are leaping.* So violent are the rapids, so heavy the water, that it is scarcely safe to fish from a canoe with less than two guides. Very often the ouananiche, swimming around the pools among the rapids, watching the opportunity to snatch the flies entangled in the foam, keep so near the surface of the water that their dorsal fins protrude from it like those of a school of sharks. If the fish are on the feed, a judicious cast of the angler's lures is likely to secure an immediate rise. As soon as a ouananiche (pronounced wananiche) is hooked the angler knows all about it. There is not a moment of uncertainty. Almost before he has had time to wonder at the length of line that is being run off the reel, a bright arched gleam of silver darts out of the water, perhaps a hundred feet away from the canoe, and deliberately turns a somersault a foot or two up in the air. The ouananiche rises to ordinary salmon flies, and Lake St John, where the best of the fishing for it is to be had, is reached by rail from the city of Quebec in about eight hours. The fish is also to be found in many of the streams of the Canadian Labrador.

In no part of the continent, probably, does *Salvelinus fontinalis*, commonly known as the American brook trout, attain to so large a size, or don a coat of so many glorious hues, as in the cold northern waters of the country north of the St Lawrence. Fifty miles due north of Quebec as the crow flies, and in the heart of the Laurentides National Park, is Lake Jacques Cartier, the main source of the river of that name. In the outlet of this lake, a *fontinalis* measuring thirty inches in length and weighing nearly ten pounds and a half was taken in September, 1912. Lake Jacques Cartier is very difficult of access, but specimens of *fontinalis* almost as large as those taken out of its waters have also been caught in Lake Edward, 110 miles north of Quebec by railway, and also in some of the lakes and rivers draining the territory lying between Quebec and Lake St John. Many of these fine char rival the specimens taken out of the famous Ontario trout streams flowing into Lake Superior from the north, of which the most noted are the Nepigon and the Steel rivers. The Nepigon, which carries off the surplus waters of Lake Nepigon, is a noble stream, and the monster fish which are played and killed in its rapid water test the angler's skill to the utmost. For very large *fontinalis* in enormous numbers there

*The ouananiche has been assigned specific rank as *Salmo ouananiche*, but it is very doubtful whether it is more than a geographical variety of the salmon or the trout. It is certainly a distinct race; but the term "landlocked salmon," usually applied to it by English writers, conveys a wrong impression. There is nothing to hinder these fish from going to the sea if they wished to do so.—ED.

is probably no water to equal the rapids of the Hamilton above the great falls in the interior of Labrador. The journey thither is a long one, and is only made with the assistance of Indian guides, but it is a trip of a lifetime, and one of which any angler may well be proud. It is safe to say that the large majority of the lakes and streams of eastern Canada afford good fishing for this trout, which is really the common fish of the country. Both tackle and flies used in Canada are, as a rule, much coarser than those used on English trout streams.

Closely allied to *fontinalis*, but an even more gorgeously coloured fish, especially after donning its nuptial livery, is *Salvelinus marstoni*, so called after Mr R. B. Marston, editor of the "Fishing Gazette." It is somewhat slimmer in shape than *fontinalis*, and has a decidedly forked tail, whilst the caudal fin of the American brook trout is a square one. It is much sought for by anglers, but is very much more scarce than *fontinalis*. It has been taken, however, in such widely separated localities in the province of Quebec as Ottawa, Maskinonge and Rimouski counties, and in some of the lakes between Quebec and Lake St John.

Chiefly important as a food fish, *Cristivomer namaycush*, the large coarse char commonly known as the grey trout,* forked tail trout or great lake trout, is trolled for in deep water by many anglers with heavily leaded lines, more on account of its large size and its splendid dietetic qualities than for the sport which it affords, for it makes comparatively little resistance when hooked. It has a forked tail, and is marked with grey instead of with red spots. It is very widely distributed throughout the Dominion, even more so than *fontinalis*, and in the great lakes attains a very large size, specimens having been caught from sixty to eighty pounds in weight. Both in Lake Nepigon and in several lakes of the province of Quebec it has been taken weighing as heavy as forty pounds. It is trolled for both with spoon and gudgeons.

Of the salmons of the Pacific coast only two—the Spring or Tyee Salmon (*Salmo onchorhyncus* or *Onchorhyncus quinnat*) and the Cohoe (*Onchorhyncus kisutch*)—are of special interest to anglers in British Columbia. The first-mentioned is the fish known in Oregon as the Chinook, in California as the Quinnat, and in Alaska as the King or Tyee. All the British Columbia salmon, including, as well as those above-mentioned, the

*Formerly classed with *Salvelinus*, this fish has now been placed in a separate genus *Cristivomer*, distinguished from the true chars by the stronger armature of the mouth in the shape of a bone carrying teeth behind the head of the vomer and free from its shaft.—ED.

blue-back or sockeye of the canneries and the humpback and dog salmon, used chiefly by the Indians—five species in all—belong to the genus Oncorhyncus of the Salmonidæ.

From the sportsmen's point of view the most important of these is the King or Tyee, Quinnat, Spring or Chinook salmon, which runs from fifteen to over eighty pounds in weight, specimens of one hundred pounds having been occasionally seen. Its back is of a blacker hue than that of the Atlantic salmon, and the white of the sides and under parts shows much less silvery sheen.

It has been a much-debated question as to whether the British Columbia salmon takes the fly, but it may now be accepted as a fact that at least the smaller Quinnat and the Cohoe will take it in salt or brackish water while remaining in the estuaries of the rivers, but that neither of them will take either fly or bait in inland waters.

The record salmon taken on rod and line in British Columbia waters was a Quinnat killed by Sir William Musgrave at the mouth of the Campbell River in September, 1897. It weighed seventy pounds and measured four feet three inches in length. It was taken by trolling with a spoon, and required an hour and forty minutes to kill. Mr G. P. FitzGerald camped with Sir William Musgrave on this occasion at the mouth of the Campbell River, Vancouver Island, and trolled while crossing and recrossing the small bay into which the river flows, under the guidance of an Indian. He employed the Indian spoon, a plain silver lure with a loose hook, and took eight fish in one catch, of which six were about fifty pounds each. As Dr Lambert has well said, "The spoon fishing of the Namsen and other Norwegian rivers fades into insignificance beside such sport," and he cites the case of Mr Duncan as having had excellent success with the prawn, which he was the first to use there, and as having caught large numbers of salmon about seven pounds in weight with a silver-bodied fly. It is an open question, however, whether these fish were really salmon or steelhead trout. These latter grow to a large size and are then often called salmon by the natives, as much on account of their close resemblance to that fish as for their large size.

At many points on the coast of Vancouver Island the Quinnat salmon are taken as early as February, and during the first weeks of spring the Indians of the west coast keep the markets of Victoria and Vancouver well supplied with these big fish taken on trolls. More fish are killed by anglers in the vicinity of Vancouver, Victoria, Cowichan Bay and the mouth of the

Campbell River than elsewhere, but this may be because they are more fished for there, and while the season commences early, as already shown, the best months are from July to November.

The Cohoe salmon is more numerous than the Quinnat, and while of smaller size than the latter mentioned, it is just as game a fish, and perhaps even more so. A good many Cohoes may be taken on the fly in October and even as late as November at the mouth of the Harrison River, on the mainland, above the city of Vancouver. This is probably the most productive as well as the most accessible water for fly-fishing for the salmon of the coast.

The British Columbia fish that more closely resembles the salmon of Europe and of the North Atlantic coast of America is not a salmon at all, though sometimes classed as such. This is the steelhead trout (*Salmo gairdneri*), which Dr Lambert has curiously enough described as "the sea-going species of the rainbow," though it is scarcely necessary to explain that neither anadromy nor any other habit can constitute even a distinct variety—much less a different species.

The rainbow, like the steelhead, is a true trout, and in addition to other differences may usually be distinguished from the steelhead by the larger size of its scales. Its scientific name is *Salmo irideus.**

Colonel Andrew Haggard, D.S.O., has graphically described the splendid sport to be had in the Cowichan River, Vancouver Island, for both steelheads and rainbow trout. Mr Babcock, of British Columbia, prefers the sport on the Cowichan to that afforded by the famous trout of the Nepigon, which river, he claims, is not comparable with the Cowichan, even from a scenic point of view.

The fact that large steelhead trout—often mistaken for salmon—take the fly in the upper reaches of the rivers, accounts for many of the stories of the killing of British Columbia salmon with rod and line in the interior waters of the province. In the Kootenay and Okanagan lakes these fish are very plentiful. They remain there all the year round. In the rivers where they are anadromous they have been taken on the fly, under favourable circumstances, both in the salt water of the estuaries and in the fresh water of the upper reaches. They have been known up to thirty-two pounds in weight, but these very large trout are usually taken on a spoon. The

*In the opinion of some ichthyologists the steelhead and the rainbow are fish of the same species, the former having the sea-going habit while the latter never leaves the fresh water. In like manner the European char, usually exclusively a freshwater fish, goes to the sea from some Scandinavian rivers. Rainbow trout introduced into British waters escape to the sea if they can.—ED.

flies most killing for the steelhead are either the ordinary eastern Canadian and European salmon flies, or the Parmachenee Belle, consisting of red and white wings and a yellow body. The rainbow trout often takes the same flies as the steelhead, though in smaller patterns. The Zulu is a killing lure, and so also are all the ordinary Scotch loch flies. These fish swarm in almost every lake and grow to an immense weight, fish of over ten pounds having been taken on the fly, though it is seldom that they are killed in the rivers over four pounds. Fish up to one and two pounds weight seem to be in millions, however, in nearly all the waters of the province, and the fishing in Fish Lake, some twenty miles from Kamloops, in the Long Lake forest reserve, has been described by several visitors as little less than marvellous. Mr Walter Longley is credited with having killed a rainbow of twenty-two pounds with a spoon in Marble Canyon Lake in May, 1900. An enthusiast who has sung the praises of this fish claims that "when fresh from the water and in brilliant sunshine, it rivals the object after which it is called, the living rainbow on its side showing a play of delicate colour which it would be hard to surpass or to equal, even in the heavens."

One of the most accessible of inland fishing waters for the rainbow trout is the Thompson River, which is followed for a considerable distance by the Canadian Pacific Railway. It is a very sporting river on account of the strength of the current, which makes it almost impossible to hold a large fish.

The fishing in the heart of the Rockies is not as good as some of the guide-books describe, but that in the South Thompson, in the Kootenay and in Kamloops Lake, under favourable circumstances, leaves little to be desired. The fishing season is a long one, and the rainbow trout found in this magnificent river are not surpassed in game qualities by any fish that swims. Moreover, they must be fished for with delicate tackle and small flies, such as are used upon European trout streams. The lower Kootenay is reached by rail from Revelstoke station to Arrow Lake station on Upper Arrow Lake, and thence by steamer through the Arrow lakes. The best fishing is just below the Lower Falls, thirteen miles from Helson. Very few fish are caught under a pound weight, and many run as high as three and four pounds.

Two species of char are found in British Columbia waters, the namaycush or great lake trout of Ontario and Quebec waters,* which is practically

*Usually classed, not as a char, but as *Salmo namaycush*.—ED.

taken only on a troll and is only found on the mainland, and the much more common Dolly Varden or Bull trout (*Salvelinus malma*), which is common to most of the streams and lakes on the mainland, and also in tidewater, and which ranges in weight from a few ounces to thirty pounds. Specimens in excess of two pounds are not usually taken on the fly, but heavier fish take any style of spoon.

Something must be said of the tackle generally used for this far-western fishing. For the Pacific salmon the American split cane rod is sometimes employed, though the majority of anglers from the United States affect the short, heavy two-jointed tarpon rods, because they bring the fish so quickly to gaff. Visiting Britishers and the majority of British Columbia fishermen use salmon rods of English, Scotch or Irish make. In fishing from a boat or canoe they should be of medium length and not too long if the fish has to be brought alongside the canoe to the gaff. Where a landing can be made for killing one's fish a longer rod will be found more convenient. Though a hundred yards of line is sufficient for canoe fishing when the guide is familiar with his work and quick to follow a running fish, it is safer to use a reel having a capacity of from 150 to 200 yards of No. F English linen line.

For trout fishing the standard ten to eleven feet split cane, bamboo or lancewood rod, from seven to nine ounces in weight, is about the best that can be had for such heavy rivers as the Thompson and the Kootenay, but for more peaceful streams and the inland lakes lighter rods will naturally furnish more sport and pleasure. Flies have already been discussed in dealing with the different varieties of fish in British Columbia waters. Visiting anglers must bear in mind that a provincial government licence, to be obtained from Victoria, is necessary for fishing in the Pacific province by non-resident anglers.

AMERICAN TROUT FISHING

By THEODORE GORDON

AMERICAN anglers usually have a strong desire to visit the "Old Country," and look forward with eagerness to the time when a long vacation may enable them to see the chalk streams of the south, the rivers and lochs of Scotland and the lakes and streams of the Emerald Isle. We have read books on British angling and such fine sporting journals as the "Field" and the "Fishing Gazette" until we imagine that we know the country and would feel quite at home upon many of its waters. Fly fishing came to us from England and for many years rods, guns, tackle and flies were imported. The best fly-dressers in New York and Philadelphia were formerly Englishmen and Irishmen.

I am not sure that Englishmen have the same familiarity and wishfulness in regard to the United States or even the Dominion of Canada, although they may know rather more of the conditions and sport to be found in the latter. A good many have come over for big game or big fish, but not a large number with a special view to trout fishing. Probably they do not think much of it, yet very fine sport is to be had, if one is in the right place at the best season. It is a big country and conditions vary greatly; speaking roughly, one might begin fishing in March in Western North Carolina; try the best streams in New York and Pennsylvania in May and visit the Maine lakes in June. Good sport is to be had in Colorado, and further west and north, in July, August and September. The Lake Superior region is celebrated, particularly the rivers of the north shore. California is a great trout-fishing State, and so is Oregon. Personally, if I travel a long distance for sport, I want big fish, not a great number, but wish to kill them in the usual interesting and exciting way—with the floating fly if possible, but at least with an artificial fly. In some waters the best fish are only to be got by spinning; in others many sorts of natural and artificial baits are extensively used. One's route should be carefully laid out, in order to avoid disappointment, and to reach the finest streams at the season when they fish best. In many rivers on the Pacific slope the big rainbows and steelheads go to sea and the former do not return until July. If one arrived too early he might find very few trout. In Maine the big fish seek the deep water of the lakes in July and August and remain

there until the first cold storm in September. The north-west wind is the wind for the Maine lakes. I am very fond of dry-fly fishing and know that I have persistently followed that method when at times the wet fly might have killed better. There is a fascination about it which took a strong hold upon me after reading Mr Halford's books twenty-two years ago, but the "Complete Angler" should be armed at all points, to enjoy the best sport wherever he may wander. He should be ready to fish dry or wet as the conditions, or feeding habits of the trout, demand. He should know how to spin a minnow, artificial or natural, where that method is necessary in order to take the very largest fish.

I fancy that one misses a good deal of exciting sport by becoming a fly purist, unless he confines his efforts to certain localities where, for instance, the very best trout will rise at surface food, such as the Ephemeridæ and other flying insects.

I have taken large trout with a small artificial fly when they were feeding upon minnows, but it was some time before they noticed it. The most important requisite is to find these big fish in the mood to feed and in position. They are queer beggars, and if not feeding regularly upon small insects will sometimes be tempted by most peculiar flies. Only last June they were taking a very large, almost black insect, which is usually to be seen only in small numbers. This year it appeared in quantities in several streams, fluttering upon the water and reminding one of his satanic majesty. The trout were not at all afraid of it, as they attacked it vigorously. Imagine such an insect upon the Test or Itchen! I fancy that the trout would fly to the shelter of the banks or weeds, or possibly ignore it altogether. Smaller hooks than No. 1 (old style No. 14) are not often required in this country, yet a few of the tiniest midge flies may occasionally prove useful. For the most part Nos. 1, 3 and 5 (new style) will be sufficient for floating flies.

The best long Mays (May-fly hooks) Nos. 4 and 5 carry a large fly, and a few of the large moths known in the north of England as bustards, or big sedges in the south, may not come amiss for "busters" in the gloaming.

When we come to rivers and lakes where the trout are very large and feed almost entirely upon small fish, we may be compelled to give up our imitations of insects, in favour of life, movement and colour. Small salmon flies may kill well—Parmacheene Belle, in raiment stolen from the fins of the native brook trout, Royal Coachman, Silver Doctor, Fiery Brown,

a big alder with brown wing, Red Tag, and others of that kind, on hooks No. 10 to No. X old style. Larger hooks are sometimes used in big lakes, but the tendency of late years has been to fish with smaller and smaller flies.

This matter of size is very interesting. I have stowed away somewhere little double-hooked Jock Scotts, Silver Doctors and Fairies (black and brown) that were used successfully in the salmon rivers in New Brunswick, in summer, when the water was low and the salmon had been up for some time. These are on No. 10 hooks old style (No. 5 new). In trout flies the smaller the size the more deceptive they are. A very small dry fly that has just sufficient hackles to float well and has the colouring of the insect it is meant to represent looks quite natural even to the human eye, which is better fitted to note differences in form than the eye of a fish. However, in certain lights, our best artificial flies are rank impostors, both to ourselves and the trout. Just after sunset, for instance, in an absolutely still, clear pool, one can detect the weakness of our presentation only too easily. If the casting line floats, the whole affair, including the fly, appears as the veriest humbug. The conditions of light and shade play a large part in the success or failure of our fly fishing, and there are often long hours in the morning when it is at its best. The evening rise is often short, and very soon we cannot see our fly upon the water.

In the last five years there has been a great increase in night fishing in the summer months. Formerly a few men fished occasionally after dark, but now a great many fishermen make a practice of it, and a few remain out until after sunrise in the morning. The trout cannot see the enemy on the shore, although they do see the fly upon the water, and will rise at great staring things full of hackles. These are probably taken for a buzzing night moth of some sort. On low water when the trout have collected in the pools this practice is very killing, but the sport cannot bear comparison with daylight fishing. The trout rarely put up a good fight at night, and often sail about as if bewildered. Very large fish are killed in this way. Casting for black bass at night is also practised to a great extent in the middle west.

The angler will rarely be separated from his favourite fly rod, and on a a long journey into unfamiliar country he should have a duplicate, or at least a cheaper, rod, to use in case of loss or accident. If rambling about with a chance of varied sport and many sorts of fish, he should have a general-purpose rod that will answer unexpected calls. There is a rod

made by a certain English firm which has held its place for many years. It is a two-handed, fourteen-foot rod, with steel centre, which can be used as a fly rod for salmon or heavy trout. It has several tops that convert it into a spinning and trolling rod, and can be used for all sorts of fishing. I fancy that it has sufficient power to kill almost anything with fins. A first-class equipment can be had in the United States, if one is not biased in favour of weapons made at home.

If the fly is oiled, one can fish rough, fast water with dry fly without difficulty. Shooting the line saves labour, and the slack line is taken in with the left hand. It can be nipped with a finger of the right hand and held in coils, which are released one or two at each switch in the air. When the cast is made the fly is dry. In fact, one or two false casts are sufficient when the fly has been oiled. I imported several bottles of "Natare" two or three years ago, and a number of preparations for floating the fly are on the market, but I find refined kerosene good enough. Take it out of any lamp. I bought a bottle of it for one cent. The scent is not ambrosial, but it is clear and light, evaporates rather quickly, but that is a good point when it is spilled upon anything—your fishing jacket, for instance. Paraffin oil is heavy and greasy.*

I fancy that one cannot have too many reels, and those now made in England for dry-fly, sea-trout and salmon fishing seem to be quite perfect. I should prefer the noiseless check, but that is a matter of taste. I hate to advertise myself when fishing. I have one old Abbey and Imbrie "click" reel that scares me when a good fish takes out line in a hurry and rouses all the dogs within half a mile.

We have a most useful cheap reel in the United States which is much used, but the spring in the click mechanism is of wire—poor, rotten stuff—that breaks at inconvenient moments. Of course, some very fine reels are made in this country and they command a good price.

If I went to England I should invest as heavily as I dared in the best work of British manufacture before I came home, and I think the visitors to the United States will be tempted to do the same. On both sides of the Atlantic brains and fine workmanship have gone into many of the articles necessary to our craft.

I notice that an angler who is possessed of a battery of fly rods is very

*Few anglers seem to have realized that if a fly is oiled and allowed to dry it remains waterproof for ever. It saves an immensity of trouble if one dips flies in paraffin at the beginning of the season, instead of carrying an oil bottle out fishing and dipping the flies just before they are used.—ED.

apt to take out his lightest and handiest rod, yet when large flies and heavier casting lines are required a heavier and longer rod may do better work. Weight upon the scales, within reasonable limits, is not of much consequence. I have used five-ounce rods that were a bit hard on the wrists, and eight-ounce rods that felt like a feather in the hand.

If one buys best quality casting lines, tapered moderately, and of finest natural gut, and but six feet in length, he can point them with two or three lengths of fine drawn, for fine fishing, or add heavier gut next the line, possibly removing a link or two of the fine end, when using large flies for big trout. Of course, the six-foot leaders are less expensive than those of nine feet. Mr Halford advises very long casting lines for the chalk streams, probably with a view to making the fly alight softly upon the water. With a powerful dry-fly rod and heavy line it requires much skill to accomplish this. Possibly a few feet of twisted or braided hair between the line and leader would prove of assistance, as horsehair falls lightly upon the water. With the old-fashioned American rods of thirty years ago and fine braided silk lines, it was easy for the expert to place his flies softly. The best of these rods, as I remember them, had wood butts and middles, and split cane tops. Time had to be given them in casting, and the movements of hand and arm were not so rapid as with the modern stiff rod. The Englishmen I have met in out-of-the-way places in this country have usually had a great quantity of "duffle," and the total weight was very considerable. One had half a ton of moose meat from animals shot in New Brunswick or Nova Scotia. One wishes to be as comfortable as possible, but a heavy outfit adds to the expenses and difficulties of the trip.

If one strikes a place where sport is unsatisfactory and insect pests are bad, he wishes to get away from it as quickly as possible. The pleasure of fishing in many regions is vastly enhanced by the rugged grandeur of our mountains and forests, and the wild beauty of many of the streams.

Trout that inhabit cold rivers of rapid descent, much rough or wild water and deep pools, are usually vigorous and full of fight. We have several species besides the eastern brook trout or char, and these have been transplanted east and west. The European trout (*Salmo fario*) is now abundant in many parts of the country and in some of the streams has been the salvation of real sport. It breeds freely, grows rapidly when well supplied with food, and can endure a higher temperature than the American brook trout, which is a char (*Salvelinus fontinalis*).

The rainbow trout (*Salmo irideus*) is a very sporting fish wherever found.

It fights madly and leaps again and again. As far as my experience goes it never resorts to the tricks of an old brown trout, but when landed is completely exhausted. Rainbows over twenty pounds have been killed on spoons, and it seems probable that the big steelheads that run up the far-western rivers are a sea-going variety of the rainbow trout. There are Cutthroats, Dolly Vardens and black-spotted Rocky Mountain trout, also the rare Golden trout, but I know nothing of these fish from personal acquaintance with them.

When one visits unfamiliar country in pursuit of sport a few letters of introduction may prove most useful in guiding one to the fishing one desires. I take it that most of us prefer fly fishing and a reasonable number of trout that are really first-rate in size and condition, not great numbers. I have fished lakes and streams in wild country where anyone, no matter how inexperienced, could take great numbers of trout, but this soon palled upon one. The fish were too small to make it exciting, and, except a few for camp use, were returned to the water. One going to the wilderness expects to find large trout. The Tucker and Feather rivers in California have a great reputation and the Klamath in Oregon hold very large fish.

One might remain in the east and go northward as the season advanced. Maine, New Brunswick and Newfoundland offer great inducements to the angler, and I should like to visit Prince Edward Island when the sea trout are running. There is so much glorious country in the United States and Canada, wonderful mountains, rushing rivers and great forests, as well as lovely pastoral regions with gently-flowing streams, verdant meadows and waving grain. Even the sun-baked plains and arid sections have beauties all their own, but these last are not for the fisherman.

It would seem to be an easy matter to find just what we desire, yet care must be taken, and trustworthy information secured in advance, to avoid needless disappointments. Men who have the habit of exaggeration or who speak confidently from hearsay knowledge sometimes lead one astray. One of the former once sent me off full of pleasurable anticipations on a journey of more than 300 miles, only to find a large stream that had been ruined by the lumbermen. All's well that ends well, however, and a good native angler directed me to a perfect piece of dry-fly water, where I thoroughly enjoyed myself for a week. It was one of those limestone streams, mostly slow flowing and rather deep, full of trout food and carrying a great head of trout. Such waters may be hard fished yet afford fair sport.

I have always wished to visit the Feather River in California, as I fancy that it is good dry-fly water. Several years ago I read a very pleasant article on it, which I cannot place. The origin of the name is interesting. There are many willows on the banks of this stream, and their drooping branches nod over the clear water, occasionally touching, or almost touching, the ripples made by the gentle up-stream wind. The Indians, who were formerly in possession of this region, were keen enough to take advantage of these conditions, as they tied the small feathers from wild geese and ducks to the ends of these branches, which bobbed and swayed in the breeze. The big rainbow trout would leap again and again at these crude "flies," offering a fine opportunity to the crafty redskin, who lay in ambush with his long spear, or bow and arrows. The first white man who visited the country saw all these bunches of feathers as he gazed up the beautiful stream, and at once christened it the Feather River.

The ideal water should be prolific of insect life as the heaviest trout will take an interest in surface food when there is a big batch of natural flies, particularly if these are of large size. We have many species of the larger Ephemeridæ, and when any of these are really well on, the fly-fisher, and particularly the dry-fly purist, is in his element. At the time of writing I am in the Neversink and between heat and drought the birth of flies had ceased almost entirely, except for those caddis flies that rise at night. Now the welcome rain has been falling since early yesterday morning, the stream at my right hand has been steadily creeping up and up, but is, as yet, perfectly clear. It is that beautiful white water that is not common even in clear streams, and the bottom is covered with light-coloured stones, yellow sand and gravel. Here and there great rocks appear, and wooded mountains fence the valley on either hand. These prolonged droughts at one season and floods of water at another have greatly injured a number of our finest rivers during the past ten years. It is the old story of the destruction of the big evergreen timber, denuding the hills and mountains of the cover that held back much water, as in a sponge, and gave it out gradually.

What we call a five-ounce tournament rod is a pleasant tool for the dry-fly angler. It has lots of backbone and carries a fairly heavy line, an E tapered, for instance. There is not much weight outboard, as it is only nine feet long and balances nicely with the reel and line in place. Some men prefer a powerful ten-footer, but one should be quite fit, and be possessed of a good wrist and arm, to cast all day without undue fatigue. I

read two articles by scientific persons recently which go to show that unless one works hard out of doors until he is tired he cannot be healthy, but if much fatigued he is poisoned by his own "toxins" (whatever those may be), and cannot be rid of these until he rests. We are here placed between the devil and the deep sea, of being unhealthy upon the one hand, or poisoned upon the other. The only sure remedy is to go a-fishing, as this is rest, recreation and exercise all in one. The tournament rod of eleven feet and ten and a half to eleven and three-quarter ounces, built for long-distance casting, may be all right for Goliath of Gath; but the average man will be more comfortable without a weapon of this description. Competition is all right in tournament casting with fly and bait, but I do not care for competition in catching fish, I wish to feel at peace with all the world, amiable, good-natured, to potter about if I feel disposed, studying the flies and fish, if there are any of these on or in the water. It is a great comfort to kill two or three big trout in a short time and be relieved of that first anxiety to catch fish. Then one feels at liberty to do as he pleases. You will note that on those dour days when the fish absolutely decline to feed and minnows are the only prey in sight, the angler fights and fishes, he is determined that the fish shall rise, they must eat his flies. All the obstinacy of his nature is aroused and his temper is vile. A couple of good fish early in the day would have sweetened all this, and he would have been content with small results. With eight or ten pounds in the creel you go home early. With an empty basket you stay out late. By the way, I wish that it was customary always to give the take in pounds (or ounces). Numbers give no conception of the sport enjoyed. If a man tells you that he killed forty trout, without giving the weight, what does it mean? He may have been up a tributary brook yanking out tiny trout from four to six inches long. In restocking, the fry and fingerlings are placed in these spring-fed burns for protection and food. When of suitable size they are supposed to drop down into the main stream or river.

It is quite an advantage to the wandering angler to be able to busk a fly reasonably well. A small stock of materials for small and large flies, dry and wet, is easily carried, with a good supply of first-rate eyed hooks. Badly tempered hooks are a delusion and ill-shaped ones a snare, not to the fish, but to the angler. It is a recreation to dress flies when one cannot fish, most interesting to follow the colours of the insects on the water, and often profitable to copy a local pattern that is favoured by the trout.

One will find much variety in size and colouring in different parts of the country, but if natural flies are plentiful the angler has a guide that may be followed with confidence. I have several artificials nearly as large as humming birds which were used on one of the big rivers of the north-west. Here we have the principle of the salmon fly again: movement, life and colour. Scotch salmon flies are often sparsely hackled, and on some rivers these may be preferred, yet a rather full hackle gives life to the fly if springy and put on the hook correctly. Flies without wings often kill well, and I fancy that if one has not the right colour or feathers he had best leave them off.

Too great pains cannot be taken with body and legs, and you will note that the best fancy flies are usually harmonious in coloration. In Nature this appears to be always true. The natural flies are dressed to perfection by their Maker, in the most delicate and perfect colours; all are in harmony with no glaring or unpleasing contrast.

I much prefer to use small floating flies, yet if it is necessary to use a salmon fly to rise the largest fish of any water, I would put aside my fancies and adopt local methods. If there are enormous trout in the neighbourhood, we want at least one of them as a sample product, provided that it is taken by fair fishing. It would give me little satisfaction, would afford small pleasure in the retrospect, if it was killed with bait. This may be a silly notion, but that is the way I feel about it. It is said that the Dolly Varden trout does not rise at flies and that there are rivers in the west where the best fish can only be got by spinning. The spoon is much used in salt water and also in rivers and lakes for salmon and steelheads. I have heard that Devon minnows are useful, but the record rainbows were killed on spoons, in lake fishing. These trout weighed over twenty pounds each.

The Government established a hatchery at the Sault Sainte Marie (the outlet of Lake Superior) about twelve years ago, and now magnificent rainbows are killed on the rod, minnows and spinning bait being the favourite lures. Large native trout are occasionally taken in the rapids.

There is usually a prejudice against strange trout in any district where the native fish were formerly abundant, but brown trout and rainbows have wonderfully improved the sport to be had in many waters. Where conditions are at all suitable and food is abundant, they thrive and grow amazingly. Big, hard-fighting fish are taken in places where trout of heavy weights were rarely or never seen. They can endure higher tem-

peratures than *Fontinalis*, and do well in big waters, below the range of the native fish. My point of view is that of a fly-fisher, but in fishing free waters, where any legal method is legitimate, one should be in sympathy with all fishermen. It is very annoying to have the trout put down by minnow spinners and bait fishers, who wade as deeply as they can; but they are within their rights, and we cannot complain. Sit down, smoke a pipe and wait a bit until all is quiet. If there are too many in the stream, stick to the biggest pool you know, and then retire to your domicile until next day. Those days when everybody goes a-fishing as if by common impulse are rare. On preserved water owned or leased by clubs or individuals "fly only" is the rule, and this simple restriction usually ensures plenty of fish and fair sport, even if a club has quite a large membership. The individual who owns miles of stream and invites no one to fish is a monopolist and should be dissolved into his component parts by the "Trust busters." If one loves wilderness fishing and that solitude where none intrude, he can satisfy his desires with no great difficulty. A journey of twenty-four hours, or a little more, will take him to the jumping-off place where his guide awaits him. The guide is a great institution, and they are usually good men, quiet in manner and anxious to give their patrons sport and pleasure. In the wilderness all men are equal, whatever they be in cities. I have camped and wandered without a guide and, much worse, without a cook. There is enough to do and you are weary enough at the end of the day without working over the camp fire. There are men who love to cook, but I detest it.

I am afraid that the giant *Fontinalis* of the Rangeley region in Maine are becoming rare, that is those of five to nine pounds, but the landlocked salmon seem to thrive in many parts of the State. Large fish are killed every year, but the very biggest that have been seen on the spawning beds have yet to be caught. Smelt are so superabundant that the food supply is always ample. The habit that all game fish have of "going for" any small fish that seems to be injured or in trouble is a godsend to the fisherman. Without it many of his artificial and spinning baits would be almost useless. A trout twelve inches long has pertinaciously attacked, and tried to eat, one of eleven inches that was being played on the fly rod, and followed the smaller fish into shallow water, just as if it had been a minnow. I know the size of both fish exactly, as the larger trout was killed on the same fly a few minutes later. Only the other day a small trout was badly skinned by the teeth of a larger one after it had taken the fly. They lay

close together in about two feet of water, and the biggest trout seemed to have no evil designs upon the small chaps near him. As soon as it was hooked he pounced upon the little one and held on like a bull-dog.

Red is attractive to many game fish, red and white will sometimes excite them if moved briskly through the water, and big queer flies may induce strange performances. I have seen trout run at monstrosities of this sort, leap over them and even pounce upon them. Of recent years I have not tried many of these experiments. I do not have the same opportunities, and the trout hide away more closely during the low water. The instinct for self-preservation may be inherited, and the big fish may have learned by bitter experience that they are in danger of being speared, snared or snagged if they expose themselves when the water is low. It is astonishing what can be done in this line by men of experience, who care not at all how they kill trout provided they can reduce them to possession. It was a great pleasure to follow the movements of the fish day after day, to know just what they did and the peculiarities of individuals. One had to have a moderate elevation above the water, and the sun in the best position for the pool chosen for observation.

It is most interesting to follow the colours of the naturals in fly fishing, but one could make a good case for any theory by quoting only instances that supported it, strict imitation, colour, method of preservation, etc. It is best, probably, to keep an open mind, study your stream and your fish, and please the latter if you can, but it is not so easy when the water is unfamiliar and you have only one or two days on it. Red Quill, Silver Sedge, Hare's-ear Sedge, Whirling Blue, Blue Dun, Yellow Dun, Wickham, Gold-ribbed Hare's-ear, a yellow May-fly, and spent gnats, is a good list of English flies. Lists of American flies will be found in many British catalogues of fishing tackle. There are dun-coloured caddis flies, dark and light, large and small, big red spinners and little ones, but no confusing superfluity is necessary. You find a small fly that you fancy is a Jenny-spinner, but it turns out to be a dun, and only becomes a first-rate Jenny, with glassy wings, after transformation. It is not a bad idea to have first-rate flies that resemble the natural, tied in several shades, say dark, medium and light. They may answer for several species that vary only a little in size, yet are decidedly different in the shade of the colour —say dun or yellow. We all know how important the presentation of our invitation is. An insect that floats serenely upon the water until its wings are dry seems a simple problem if we avoid the " drag," but how about

some of the caddis flies that flutter or buzz, and fly off the water for an instant, only to alight again? If insects never buzzed I fancy that our floating flies with centipede legs would fail to kill.

With quill bodies and oiled flies, a moderate quantity of hackle is sufficient for a floating fly. A few of Mr Skues's patterns of nymphs dressed upon larger hooks, say No. 3 (new style), might prove a good investment. The American Grannom is an exasperating fly at times, when it takes flight at once and the trout are feeding on the nymphs. It is most extraordinary how swift the transformation of the larger Ephemeridæ is on some occasions. It looks as if the fly rose from just under the surface, in perfect form with wings erect.

I lay upon a flat rock in the stream, where the water was about four feet deep, during the rise of a large, light yellow Ephemera, which the trout were taking boldly, and the insects were coming to the surface almost under my eyes. The effect of the rapid transformation was peculiar; one imagined that the flies rose full fledged from the bottom. Not all were hatching in this way, as a few of the flies could be seen floating upon the stream; I presume that the air was very dry, as it was a fine day in the month of June. The flies did not rise in the quiet water of the deep pools but in the streams.

Of recent years I have preferred to fish the well-known streams in settled regions and almost exclusively with the dry fly. The portions of these waters that are not preserved are overfished, but when conditions are good, fair sport may be had. The presence of brown trout in these waters has improved the fishing, as the average size of the trout killed is much larger than formerly, and big fish are not uncommon. Native brook trout are still very plentiful in the upper reaches, where the streams are small and the water is cold in summer, but they are for the most part very small. All chars are, I believe, very good to eat, and *Fontinalis* is certainly one of the best. This fish attains large proportions in regions where the food it prefers is abundant and where it can retire to the deeps when the surface water has become heated during the summer.

It is comparatively easy to maintain a good stock of brown trout if the water is at all suitable and holds the necessary food. These fish are sturdy beggars, and successfully endure the extremes of heat and cold, prolonged drought, and many fishermen. Of late much of the restocking has been with native trout. This is probably a mistake, as we cannot restore the conditions of twenty to thirty years ago.

In the eastern streams where it is content to make itself at home and does not wander seawards, the rainbow trout of the far West is a success and affords the best of sport. It is game to the backbone, and rises freely at natural and artificial flies. If a good stock of both the brown trout and rainbows could be maintained side by side it would be agreeable to anglers, as one fish may be taking well when the other is dead off.

These conditions existed for a time in the Eropus in Ulster Co. N.Y. The rainbows were very numerous many years ago and a fair number were taken this year (1912) up to one pound and a half. This shows that they have maintained themselves to a certain extent. Allowing for the differences in coloration, many of them resemble a small fresh-run salmon, with small heads and beautifully proportioned, plump bodies.

I hesitate to write freely on the subject of artificial flies, as it has been a hobby with me, and when talking or writing of our hobbies we do not know when to stop. As a youth I bored good-natured people to extinction with flies and fishing. I claim, however, that I talked of shooting in the fall of the year, which changed the subject. Nowadays I fancy that I enjoy the conversation and writings of other old hands quite as well, or better, than my own. That is, if they are men of long experience who are good observers and have studied the problems presented to every fly fisher with an open mind. The youthful angler wishes to tell everybody how to fish, and there are older enthusiasts who break into print after a short experience. We pick up good hints here and there in books as well as by meeting good fishers in our wanderings. For instance, that hint given by the veteran angler, H. R. Francis, many years ago, that a very small Starling or dun-winged Coachman would kill when the winged ants were on the water, and this in spite of their difference in form. That hint gave me twenty-two fine trout one afternoon, when other attractions failed and I had no imitation of the ants. I killed a few fish that were hidden away during the low water with the same fly in July of this year.

I fish quills a great deal, but peacock is often weak and condor unobtainable. I have tried cementing and gluing the quill to shank of hook, but like better a ribbing of practically invisible gold wire. If you will buy your quill-bodied flies months before you expect to use them, and allow them to become dry and set upon the hook, they will last much longer and endure the rough usage they receive. The sharp briary teeth of small trout quickly cut quills.

It is hard to beat fine dubbing for the bodies of light-coloured duns and

caddis, as you can get the exact shade. They look well on the water and good trout approve of them. Any fly may be made to float well, even if the body is made of wool. I dislike this material, yet several patterns seem to require it.

Our old friend, the Gold-ribbed Hare's-ear is a good fly, in two shades, light and dark (I add a grizzled hackle to make it cock and float still better), but, tell it not in Gath, I have killed a great many of the best fish on a fly that has been very troublesome, as the quills and hackles are rare over here. In England they would probably be easy enough, and we can have three shades of dun, dark, medium and light, in quills and hackles. This gives a number of flies that are often plentiful in spring and early summer. The wings are plain wood duck, split, a light feather, giving the effect of semi-transparency, not dull and heavy, as are many of the wings used. This fly has been in use nine years, so has proved itself.

There are flies that kill everywhere, and the Wickham is one of these. It may be dressed large and resemble a big brown Sedge, and is a favourite with night fishers, or it may be tied very small with pale dun wings and ginger hackles, and have the appearance of one of the little light-coloured caddis, fluttering on the water. If you like you can have a silver body, or Silver Sedge. In looking over a large stock of artificial flies at the dealer's, one will not go far wrong if one selects the more natural appearing flies. Brown, brown-red, dun, yellow, orange and black: you will choose the colours you prefer, and have confidence in, and probably do well with, them. Nature's colours are in harmony, and many of the flies sold in the shops can only appeal to the curiosity of the fish, or enrage them to such an extent that they try to smash these glaring discords.

Tame or very hungry fish will rise at anything that they fancy eatable. If not found desirable the object is promptly blown out of the mouth. An acquaintance of mine, a professor, of an inquiring turn of mind, visited a pond near a hatchery last summer, where one was permitted to fish on payment of fifty cents per pound for the trout killed. As the fish were free risers, he tried them with a piece of chewing gum, a cigarette butt, and a small piece of tobacco from a cigar. All these were cheerfully accepted, and taken down, only to be rejected in a moment. I have tempted a big chub with a small block of wood, and a black bass of about a pound with part of a cigarette. This last was blown out and as the paper dissolved many chubs came to investigate the grain of tobacco, but the white paper

seemed to tempt them most. It is not necessary nowadays to paint pictures of the delights of fly fishing, in glowing colours, in order to attract fresh devotees to our shrine.

Everybody fishes for something, and as for trout fishing in the more accessible districts, the puzzle is to provide sport for the many, not more rods for the fish. The preserves will take care of themselves, or rather the owners will; but in the case of waters that are free to all I should stock with hardy fish of rapid growth—brown trout or rainbows—in the large streams; the former seem to do well everywhere, while the latter are not always a success. If one species thrives and affords good sport it is unwise to try experiments with foreign fish. The Commissions have accomplished much good work in the country, and not many mistakes have been made. The carp was one of these, and once in possession they cannot be got rid of; yet it is consoling to know that there is a sale for them among the poorer classes in the large cities. One is inclined to grumble when favourite streams are over-fished and he meets strangers at every pool or bend, but as a matter of fact excellent sport may yet be had quite near the great centres of population; at the proper season, of course. If one steps into the water on a summer morning and notes that it is warm (particularly during a drought), he need not expect to find good trout in feeding humour.

Our favourite sport is an uncertain one at the best of times. It is affected by the weather and moods of the trout, even by the condition of our own minds and bodies. There are many puzzles and contradictions, so that it affords a limitless field for study, theorizing, argument and discussion. It leads us on and on through the years and never becomes dull or stale. We are constantly learning, yet never receive a diploma. In fact, the more we learn and the wider our experience the less cocksure and confident we become. Lessons learned in one school do not apply in another, yet there is something gained every season. Men drop out of other sports as they grow old, but this is not true of angling. The fly-fisher is as enthusiastic at ninety as he was at nineteen, and nothing but ill-health or extreme weakness of body will keep him from the water side. An old friend of eighty summers travelled from Georgia in the south to the Restigouche in New Brunswick as soon as the ice went out of the river in spring and stepped out of the car into a snowdrift. The next day he fished for many hours from a leaky canoe, caught one 25-pound salmon and a severe influenza, was put to bed and ordered home by the physician, but when he arrived he was

as enthusiastic as ever. With what interest, year after year, he awaited those telegrams from the Canadian rivers saying, "The ice is out," and with what delight he received them! He was like a boy going off for the long vacation. It is thus with all of us. Once an angler, always a fisherman. If we cannot have the best, we will take the least, and fish for minnows if nothing better is to be had. I am afraid to say how many sorts of fish I have taken on the artificial fly, and I have tried for others.

A sea-fishing friend of mine heard of successful black bass fishing with fly at the south, and he fancied that salt-water fish might be killed in the same way. Unfortunately he knew nothing of surface fishing and the water on his coast was discoloured from a river. He attached two large flies and a heavy lead sinker to his line, and for two hours waited patiently for a bite. Then he had a brilliant thought, which was at once acted upon. He baited both flies with shrimps and made a fresh cast from the reel. After this combination was made sport was quite satisfactory, and he boated a number of fine fish, but he afterwards told me that he did not believe that artificial flies made much difference.

THE PIKE, AND PIKE FISHING

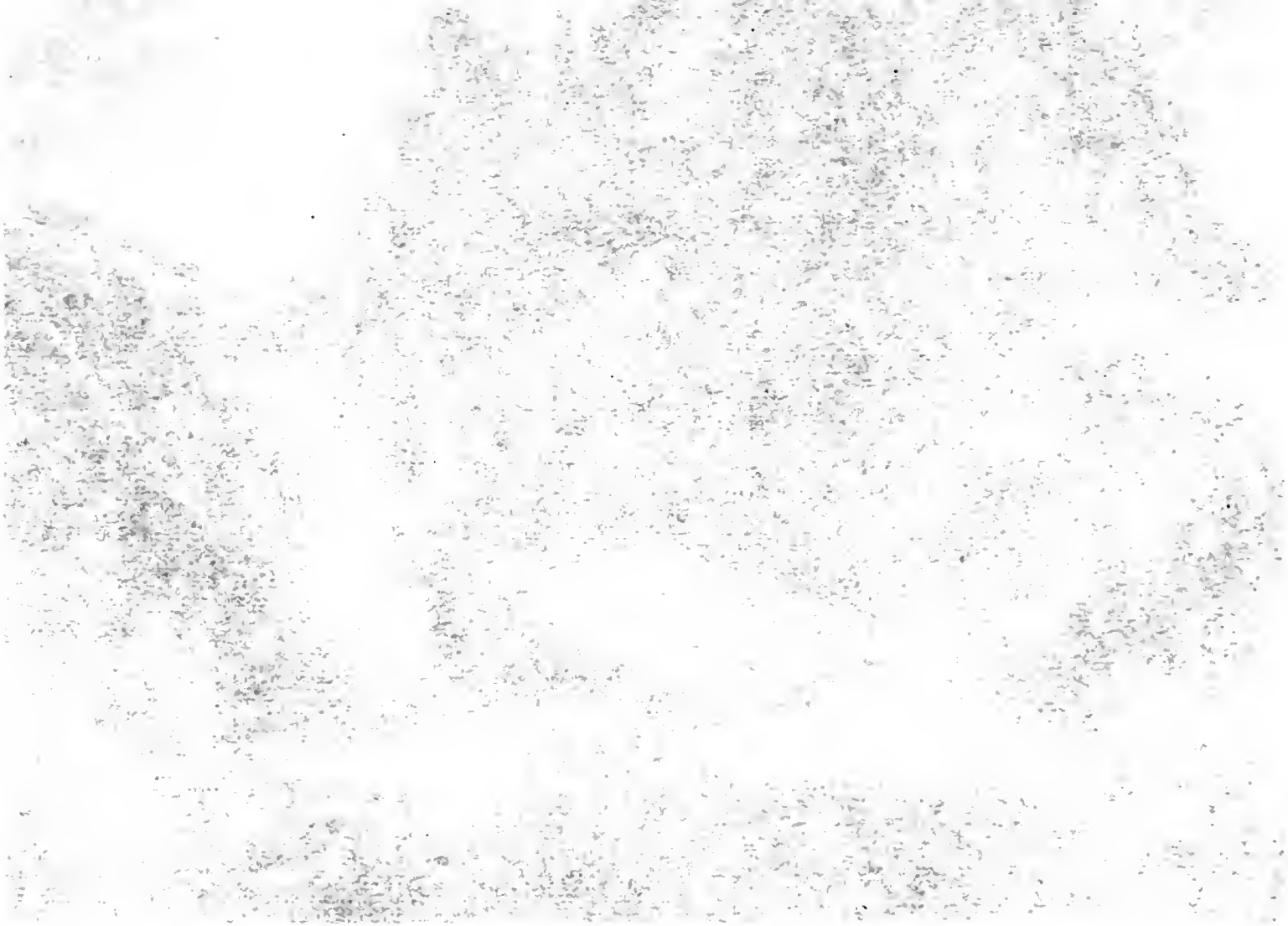
By R. B. MARSTON

THE pike (*Esox Lucius*) is in England usually called the jack when under four or five pounds in weight, and the smaller fish were also formerly called pickerel; Chaucer says a pike is better than a pickerel.

In Scotland it is called gedd; in Sweden, gädda; in Germany, hecht; in France, brochet; in Denmark, gjedde; in Italy, luccio; in Holland, snoek; in Russia, schschoka; in Rumania, stuke; in Bohemia, stika; in Poland, szezopak; in the United States and Canada the pike appears to be called after its Indian name, muskellunge, when of large size, but I cannot find that *Esox nobilior,* as they call it, is either a greater or better fish than our European pike. Pickerel is the name for a young pike, and also of the pike-perch in America.

The pike is found in almost every part of Great Britain and Ireland, and was certainly not brought into our islands by man, as its remains have been found among those of animals now extinct. The fact of its appearance in waters where it was not previously known is probably due to its spawn having been carried by birds.* Although it cannot live in the sea, it is often found in waters affected by the tide—even when brackish—and an extra high tide will " turn up the pike," as they say in East Anglia. The colour of the pike varies, like that of other fish, according to the nature of its surroundings. In a dark, poor, peaty water the pike are dark, almost black, when seen in the water from above; in a bright, clear lake or stream they are often a fine golden-olive on the side, with light-coloured markings, which give the well-known mottled appearance—much more marked in fish in some waters than in others—the side colouring gradually shades off into almost black on the back, and almost, or quite, into white on the belly. The shape of the fish varies according to age and condition, and also according to the quantity and nature of the food supply. Some waters produce pike which are really in shape like a thick roundish pike—like a bolster sharpened to a point at one end and flattened out at the other. Other waters produce pike which are very deep for their length, with comparatively small heads and tails.

*I am unable to agree with Mr Marston on this point, believing that pre-Reformation clerics are mainly responsible for the distribution of pike. There is a group of nine lakes in Mochrum (the parish where I live); they are of similar character; seven swarm with pike; two contain no fish but trout, eels and sticklebacks. If waterfowl carried the spawn, these two lakes could not have escaped being infested with pike.—ED.



PIKE FISHING
About 1830.
From a painting by J. Pollard.

PLATE XXIX.

I have seen very bream-like pike—and trout also. The handsomest pike are those from a salmon river, where their food so largely consists of young salmon. As I write I have before me a very fine female pike caught in the Shannon, at Athlone, which weighed thirty-seven pounds when weighed by me in London two or three days after it was caught, so that it was in all probability a good forty pounds when killed. Pike of this size should be about forty-six inches in length. Instead of the almost straight back and belly usually found, especially in male fish, its shape approaches more that of a trout—a long oval—and the head is smaller than that of a male pike I caught in the lake at Bowood which weighed rather over twenty-six pounds. The pike angler will meet with his favourite fish in nearly all parts of Europe, chiefly in the lower and less rapid parts of the river; in lakes it may be found even at an altitude of over 4,000 feet.

Nearly all books on angling which treat of the pike give stories more or less true both as regards its size, its age, and its voracity. Concerning all these matters, as my old friend, the late Frank Buckland, said: "More lies have been told about the pike than about any other fish in the world," this alone gives this fish a distinction which helps to endear him to the true pike angler, and surrounds him with a halo of romance for the general public. Want of space forbids me to enlarge on them; some of them will be found in a recent most valuable little work* by Mr Tate Regan, who has charge of the fish collection in the Zoological Department of the British Museum, South Kensington. Mr Regan says: "Well authenticated instances of the capture of pike of from thirty-five pounds to forty-five pounds' weight are plentiful; there are many tales of much larger fish, which may be true enough, but, unfortunately, cannot be verified."

It seems to me that this exactly sums up the position. Personally I can see no reason to doubt the story of the Kenmure pike, caught in Loch Ken by John Murray, gamekeeper to Viscount Kenmure. The Rev. W. B. Daniel, in his excellent work on "Rural Sports," published one hundred years ago, says this pike weighed seventy-two pounds. As regards the age to which pike live, Mr Regan thinks that a fish of sixty or seventy pounds' weight might be at least as many years old.

HOW TO TELL THE AGE OF FISH

Since Mr Regan's book appeared I have published in "The Fishing

**The Freshwater Fishes of the British Isles*, by C. Tate Regan, M.A.; Illustrated; London: Methuen & Co.

Gazette" some extremely interesting discoveries of means by which the age of pike and other fish may be ascertained.

The age of some fish, especially of salmon, can be told with comparatively great exactitude, and also whether the fish have spawned or not, by examining the rings on the scales, which can be seen when a scale is cleaned and examined with a magnifying glass, by holding it up to the light. For some freshwater fish, especially trout and pike, when of a good size, this method is not so satisfactory as, after a certain age, the annual rings become blurred, and appear to run into one another, so that they are useless as an index of age. In "The Fishing Gazette" of February 17, March 2, 9, and 16, 1912, I gave the first account published in English, of a method of getting at the age of fish by counting the annual rings on the gill-cover, shoulder-bone and backbone. These methods, which were first used with sea fish by Professor Heincke, and Dr Immermann, were afterwards applied with great success by Dr J. Arnold, of St Petersburg, to many kinds of freshwater fish; for instance, Dr Arnold found that a pike of nearly twenty-four pounds from Lake Ilmen was ten years old, but Dr Arnold thinks this was an unusually fast and well-grown fish. Sections of one of the bones of a pike's backbone appear to give the best series of annual rings.

Pike spawn in the spring from end of February to April, according to the mildness or severity of the weather; the fish collect together from the deeper parts of a river or lake, and, with considerable splashing among the weeds in the shallower water near the sides, the female, generally accompanied by one or two males, deposits an enormous number of eggs among the weeds—a five-pound fish will yield some hundred thousand eggs, and they are then fertilized by the milt of the male fish. At this spawning period the fish are too busy to feed much, though, just when they are collecting together, before spawning, they are often simply ravenous. The best, and often the only time, in deep, weedy, or rocky lakes, for getting rid of pike by netting is when they are on the shallows spawning; they lose then much of their natural fear of man.

As regards its voracity, it may be said that a hungry pike will attack anything and everything which comes in its way which has life or the appearance of life, from a child's toy boat to the muzzle of a horse drinking at the side of a lake. Many of all sizes have been found dead, choked by a fish little smaller than itself, and often of its own species. I always think one of the best pike tales is that of the big retriever dog which had

its tail seized by a pike just as it had reached the opposite side of a pond and was about to scramble out on to the bank, and so safely landed the fish at its master's feet.

METHODS OF ANGLING FOR PIKE

Fly-fishing for Pike.—The great seventy-two pound Kenmure pike, previously referred to, is said to have been captured on a pike-fly—and in many old works on angling illustrations of pike-flies are given. I have one of these old flies on the table before me as I write, which might well have been the original "fly" which killed the Kenmure monster. . . . It is over five and a half inches in length, about as big as a blackbird, the body is of wood covered with a sort of red baize (red is a good colour to attract a pike); for eyes, there are two big blue beads; to the head and along the back is fastened a strip of skin of some animal with long, rough, dark brown hairs, which give a lively movement in the water; along each side is a broad strip of gold braid, and on each side for wings are "eye" feathers of the peacock. There is a double hook, each as big as a small gaff, the wire is three-sixteenths of an inch in diameter, and the "gape" of each hook is nearly two inches; it weighs about three ounces when wet.* Obviously such a "fly" as this was never intended to be cast with a fly-rod as a fly is cast. At any rate, I should be very sorry to have to stand near the angler so using it. In spite of the heavy hooks the plump bird-shaped wood body almost floats it, and the proper and only way to cast it would be to cast it as a spinning bait is cast; using a strong sea-casting rod I could easily cast it fifty yards in that way, from the reel, or in the Thames style, i.e., with the line drawn off the reel and coiled in the boat or on the bank. It could also be used, as it was doubtless intended to be used, by dropping it over from a boat and letting it trail behind as you row slowly along, so as to bring it to the sight of any pike lurking in the weeds, or near the reeds fringing a lake. Used in that way, pulling it in a foot or two at a time, and then letting it stop a second or two for the hairs and feathers to expand, it would be irresistible to any hungry pike big enough to tackle it. So to dismiss this old cumbersome "fly" as an impossible lure would be quite a mistake.

*Although, as they are so generally used I have mentioned triangle hooks, I am convinced good single hooks are quite as useful, far more sportsmanlike, and far more comfortable to use. All the best and biggest game fish are killed on single hooks.—R. B. M.

But in order to cast a fly with a salmon rod as you cast a fly for a salmon it is necessary and perfectly easy to make, or get your fishing tackle maker to make you, a big fly with a cylindrical body of good cork or hollow celluloid, well varnished, then painted a bright red or yellow, with swan breast feathers dyed red and blue for wings, and any big hackles at the tail to mask an ordinary strong single, double, or triangle hook at the tail, attached to a wire running through the body, and another flying hook, if you like, to hang from the swivel at the head; which can have big blue beads for eyes. This would float like a cork and be light enough to cast with an ordinary salmon rod.

With a fly constructed on these lines I have had good sport on a shallow lake with weeds near the surface, where spinning was useless, and I can strongly recommend it to salmon and other anglers as a most interesting and sporting way of pike-fishing. As the " fly "—which need not be more than two or three inches in length of body—the feathers make it seem much longer, as it is pulled in by the left hand drawing in the line ready for another cast—floats on the surface it looks exactly like a young bird of some sort moving along the surface. When a pike comes at it his head often comes partly out of the water, and I must say I do like to see the savage rush of a pike, and his ugly jaws close on the bait. Often a pike will rise at it the moment it touches the water; and you can cast it into little spaces and openings between the weeds without fear of its sinking and getting caught in them.

A big "Halcyon" spinner—which is merely a bundle of peacock feathers, with a few bits of swan feathers dyed red tied in with it, and a hook at the end and a light spinner at the head—is a fairly good substitute for the more elaborate pike fly I have described, but the drawback is that you must keep it moving pretty fast, or it sinks and catches in the weeds. As made, the metal fans are unnecessarily heavy, the invisible transparent celluloid fans or blades, such as Mr Wadham puts on his admirable "Nature" spinning baits, are a great advance on the stout metal blades, i.e., of the spinner.

SPINNING FOR PIKE

Spinning for pike, either with natural dead bait on some form of spinner, such as the " Chapman " or its many derivatives, or with an artificial fish or spoon, is the most sportsmanlike and interesting method of pike

fishing in all kinds of water where spinning is practicable. Where the pike are fairly numerous, and one does not expect to get fish over from seven to ten pounds, the most fascinating way I know is to use a short, single-hand, American split cane spinning rod, and an American multiplier reel holding sixty or seventy yards of fine undressed plaited silk line. Once you have mastered the manner of casting and using this tackle you are not likely to return to the older methods.

In this style of single-hand casting with the very light rod, our American friends had the field to themselves for many years. Now a good many of our anglers, who have learned its advantages at casting tournaments —which, by the way, although pooh-poohed by many old-style anglers, have done more than anything else to improve rods and reels and lines, and make methods of angling known—and probably a much larger number in France, are ardent admirers and users of the American style of single-hand light bait casting.* In the black bass Americans have a fish which is very widely distributed, a fine bold game fish which, so to speak, lends itself to encourage fishing for it with a surface bait—spinner or artificial frog, etc.—cast lightly a score or two score of yards from the bank or boat. Having obtained from some firm of fishing tackle makers a good split-cane bait-casting rod, from five to seven feet in length—some anglers prefer a longer than five, some a shorter than seven, foot rod, with some good American multiplier bait-casting reel or British reel made for the same kind of work—the best thing to do is to get some expert friend to show you how to use it. The chief points to remember are to wind the line as evenly as possible on the reel, and to touch the line, on the barrel of the reel when it is revolving in the cast out, with the right thumb all the time the bait is in the air; the touch must be very gentle at first, but it should be continuous, and just as the bait is falling into the water, at the end of the cast, you press the thumb down on the line and stop the reel, thus preventing the overrunning of the line. The cast can be made either with the side swing, as in the old well-known style of casting from the Nottingham reel, with the double-handed spinning rod, or overhead, the more usual style in America. The reel is put on the rod with the handle to the left when the reel is under the rod, and you *use* it with the reel turned up on the rod, so that you wind in with

*A year after this was written, in 1912, a very charming little French work on angling has been published at 3 fr. 50. It is entitled *La Pêche Sportive*, and is written by that keen angler the Vicomte Henry du France, and has an Introduction by Prince Pierre d'Arenberg, another keen angler, and both express their appreciation of casting tournaments and their good effects.—R. B. M.

the handle towards your right hand, and you cast with it also above, not under, the rod. Having the reel on the rod, and the line wound up until the bait hangs a foot or so from the rod point, you grasp the handle below the reel so that the thumb can rest on a bar of the reel and touch the line wound on to it (there should only be just room on the cork handle for the grasp behind the reel), you then turn your arm and hand up and over your right shoulder, much as if you were about to throw a stone or drop a golf ball behind you. This should extend the rod horizontally behind you—if you remember, as a boy, casting a bit of clay, or a small potato, stuck on to the end of a switch you will get the *idea* of the overhead single-hand cast at once. Just as you make the forward movement, as with the switch, you drop the point of the rod a little towards the ground behind to get a swing on the bait, and then bring it smartly straight over your shoulder, and, at the moment you feel the full pull of the weight against the rod, you lift the thumb off the line on the reel, and, as the reel is perfectly free-running, it turns round with great rapidity in answer to the pull of the weight, and the latter draws the line after it through the air. By just skidding the line under your thumb, by gently pressing it, you prevent it turning faster than the weight can pull the line through the rings and, as I said before, to stop the reel you merely press the thumb down hard on the revolving spindle and line.

An important point to remember in making the cast is to stop the forward movement of the rod soon after it has passed overhead, and not to let it drop down horizontally in front of you, but to keep it steadily up at an angle of about 45 degrees. Suppose you were standing with the rod sideways to a big clock dial, with your left hand side towards it and your shoulders reaching to about the centre of the dial, then you might imagine your rod was the long hand of the clock, then you will see in a moment that when held horizontally behind you the rod points to 9 o'clock, you drop it gently to 8 o'clock, and then bring it quickly and steadily over, increasing the pace until it points to 2 o'clock, lifting the thumb to release the line between 12 and 2, and then holding the rod steady at 2, while the line flies out and you are controlling the reel with the gentle pressure of the thumb. If you drop the point of the rod, while the line is being drawn off by the bait, you break the continuity of the pull, and in that second, or fraction of a second, because it is not being pulled as it comes off the reel, it does not come off the reel, but goes round with it, and then your cast is pulled up suddenly and spoiled by an overrun. Towards the end of the cast,

when the bait is losing speed and falling down into the water, you get an overrun unless you press the thumb on the line on the revolving spool to stop it, simply because the free running reel goes on revolving, although the line is becoming slack, and so it winds it round the spool, and a bad overrun often results. The overrun is caused by the reel overtaking the pace at which the line is going through the rings. Some anglers use a leather thumbstall to preserve the skin of the thumb from the effect of the friction, but it is not necessary with baits of a quarter or half an ounce, except perhaps in tournament casting for records. When using a double-handed rod with heavier baits I always feel more comfortable with a tight fitting kid or cotton thumbstall, especially if the line is at all rough. Having made the cast, you can wind in with the multiplier quite as fast as is at all necessary; as long as the bait spins well, or even wobbles, it is fast enough for successful fishing. I have had great fun casting a light spinning bait in this way with one hand, such as a "Wagtail" or a small spoon, but I generally use the side swing with the single-hand rod when fishing from a boat or on a small river where long casting is unnecessary. For accuracy the single or double-hand overhead cast must always beat the side swing, but in practical fishing this is not often so important as in tournament casting.

SPINNING WITH THE DOUBLE-HANDED ROD

Both with the single and double-hand spinning rod there are several ways of casting and of manipulating the line. The simplest and easiest is the old Thames style, in which you pull line off the reel and let it lie in coils at your feet, either on the bank or, much preferably, on the flat end of a punt. Unless the banks are almost like a tennis lawn, coiling the line on them is liable to cause all kinds of tangles as it catches on bits of weed, sticks, etc.; the style was doubtless invented for use in fishing from a punt, and I have seen my old friend, the late Mr Alfred Jardine, kill more heavy pike—fish from fifteen pounds to thirty pounds—using the Thames style than in any other way. For some reason or other he was prejudiced against the Nottingham style of casting from the reel; he said with the Thames style you can cast more lightly, more accurately, with less exertion, and that by pulling the bait in with the left hand, drawing in a yard or so of line at a time, that you can vary the pace, and "work" the bait in a more natural way, than you can when winding a winch in

a mechanical sort of way. I often argued the matter with him while we were pike fishing from the same punt, with the keeper in the middle rowing us slowly, so that Jardine at one end, and I at the other, could cast our spinning or paternoster baits so as to cover all the water within reach of a good fishing cast. Jardine had a great objection to casting even a yard more than was necessary, although he could, when it was needed, make a very long cast with great accuracy. He had his faults, like most of us, and made many enemies by his somewhat bluff and uncompromising manner if some one was not pleasing him, but although I knew him for about thirty years, and worked with him on many committees, and fished with him on many delightful winter expeditions after pike, and occasionally in the spring after trout, we never had a cross word. He was a good all-round angler in every branch of the sport, including fly-fishing for trout and salmon, and sea fishing, but his chief delight was pike fishing, and certainly no man ever caught so many, or such large fish, on such fine tackle as he did, and he fished from boyhood until he was nearly eighty. He was a most fair and generous companion when fishing, always ready to give his friend the best chance; there is no doubt he died more happy than he would have done if anyone had beaten his splendid brace of pike—one of thirty-six pounds and one of thirty-seven pounds—which are now, I believe, in the Museum at Tring. Of pike between twenty pounds and thirty pounds he took more than he had any record of, and all casting in the Thames style, which includes drawing in the line with the left hand and letting it fall in coils at one's feet, and also gathering it in with the fingers of the left hand into a little ball held in the palm of the hand. To do this he drew off the reel fifteen or twenty yards of his fine dressed line of plaited silk, and then, with a sort of shuttle movement, as he says Francis Francis called it, he gathered the line in a series of small coils into the palm of the left hand—easy to do when the knack is acquired—and then making the cast and letting the line run through the fingers.

A GOOD PIKE ROD

The favourite pike rod of Mr Alfred Jardine was one made in three joints, with butt and second joint of carefully selected East India bamboo cane, with two tops of greenheart, both of which pack into the butt, a great convenience, the angler having his second top safe, and always handy if needed. The rod has a large butt button and large porcelain rings;

one top is shorter than the other, so the rod is ten feet or twelve feet long, according to the top you use, and it is all you want for any kind of pike fishing, the short top being for live bait with float, and ledgering, and the longer one for spinning and paternostering.

THE NOTTINGHAM STYLE OF CASTING FROM THE REEL, AND ITS MODIFICATIONS

It is an interesting question whether casting *from the reel*, that is, making a cast and letting the bait pull the line off the reel as the latter rapidly revolves, was used first by English or by American anglers. Anyway, both English and American anglers cast from the reel some sixty to seventy years ago, and seem to have evolved the method independently, the Americans using a brass multiplier "Kentucky" reel and Trent anglers the ordinary Nottingham wood reel. In the last half century both reels have been constantly improved, and there are many first-class casting reels on the market, both English and American. About thirty years ago Mr David Slater made a reel which I called "The Combination Nottingham and Ordinary Reel." It is a beautifully made wood reel—walnut wood as a rule—running on a centre pin, inside a frame with side bars, and fitted with optional check. One can use it for any and all kinds of fishing—I have used one for sea fishing—spinning for salmon, pike and trout, for all kinds of pike fishing and, in fact, for all fish and all styles, and in fly-fishing for trout at Blagdon, where the first three trout I caught were all over six pounds. Good strong reels of this kind are also made of vulcanite, one of the best being the "Ariel," designed by Mr Coxon, the well-known Trent angler. You must be an expert in casting and controlling it, or it will beat you. A beautiful and favourite metal casting reel is Messrs Hardy's "Silex," on which thousands of salmon have been killed, as well as heavy Indian Mahseer.

In casting with these and many other kinds of casting reels, including the Dreadnought Company's "Meteor" reels, with which a two-and-a-half ounce bait has been cast over one hundred yards, and the many excellent American multipliers, the angler can adopt the old Nottingham side swing; the double-hand, overhead cast, first described and advocated by Mr John Holt Schooling in the "Fishing Gazette" at my request; or a not so generally known, but very useful cast, which I have called

the "Boyne" underhand cast, as I believe it first came into general use among salmon anglers on the Boyne. In a rough way these three casts are like the three styles of bowling a cricket ball, viz., "round arm," "over arm," and "underhand."

THE SIDE SWING

In casting from the reel the side swing is the oldest and the most generally used style; with it Mr J. T. Emery held the record for long distance casting for many years at our International Tournaments. It is the easiest of the casts from the reel to learn, and yet I have known anglers who never could get into the knack of it. I have often been reminded of the side cast when looking at one of those enormous cranes one so often sees at work on some building in London. The long arm represents the rod, the chain and winch represent the angler's line and reel, and the bucket suspended from the crane represents the angler's spinning or other bait suspended from the rod. And the action is very similar; in both the swing is from a pivot. The angler winds up the bait until the lead on the trace (if a lead is used), hangs about a foot or eighteen inches from the top of the rod (the pike float hangs in about the same position if one is live baiting), the right hand grasps the butt of the rod above the reel, which is fixed on underneath, with the handles to the right, the fingers of the left hand close all round the reel, so that the tips of one or two can touch the revolving rim of the barrel of the reel, to hold it while you make the cast, and to release the reel when the side swing has brought the rod round and upwards until it points towards the place where you want to cast the bait. The pressure of the fingers on the rim of the reel is removed for a second just when you instinctively feel the bait has a good pull on it, and is going forward; this starts the reel as the line pulls at it, and then the fingers under the reel, which the left hand holds, must *just touch* the revolving rim, so as to prevent it running round faster than the line can flow off when pulled by the bait, which is flying away through the air towards your mark. If, as already explained, the reel, in revolving, overtakes the line, there is an "overrun" at once and a sudden stoppage of the flying bait which, if it is a live bait, is often jerked off. Towards the end of the cast, when its force is nearly expended, and the bait is dropping into the water, the finger tips are pressed tightly on the reel to stop it, or there would be another "overrun." These two are the chief causes

of the difficulties of the beginner in casting from the reel, and if the angler can remember them always he will very soon learn to avoid them by the pressure of the fingers.

Another cause of "overrun" is that the line has not been wound on the reel evenly, neither too tightly nor too loosely. American anglers rarely, in bait-casting, use any but the cast from the reel; their multipliers are small in diameter of barrel, but wide from side to side, a great contrast to the big diameter of our Nottingham reel, which is narrow from side to side. In winding in the American angler moves the line rapidly across the barrel backwards and forwards.

The method of holding the rod with the right hand above the reel, in the double-hand side-swing cast, and the other hand under and round the reel, is the one I prefer, but many good anglers prefer to hold the rod in the left hand, above the reel, with the right hand grasping the butt just below it, so as to be able to touch the run of the reel with the fore-finger to control it and stop it. One advantage claimed for it is that at the end of your cast you do not have to change hands in order to wind in, as you must do if the handles of the reel are towards your right hand. But in actual fishing I prefer to use my right arm to cast with, and the change is a rest; a long turn at spinning is fairly tiring for arms, hands and back.

ADVANTAGES AND DISADVANTAGES OF THE SIDE-SWING CAST

The advantages of the side-swing cast are that you can use it with almost any reel, whether of large or small diameter, and you can drop the bait more lightly into the water than with the straight overhead cast. The disadvantages are that you must have a clear space behind and around you for the swing, and the aim is not nearly so accurate as with either the overhead or underhand cast. In actual fishing on a lake or open river, it is not often of vital importance to drop your bait within a yard or two of any place. I always cast from the reel when I fished in the same punt with Jardine, and there was not a great difference in the weight of our respective bags, though he often dropped his bait into places which I dare not try to reach for fear of landing in the weeds on each side. On the other hand, I could cover more water than he did, and he lost time through his fine line, bunched up in his hand, occasionally "balling" as it went through the rings, necessitating an unravel before he could

cast again. Then, again, if I struck a good fish when winding in I was ready to play it at once, whereas if he struck one he had perhaps fifteen or twenty yards of fine line bunched up in his left hand, and sometimes had an anxious time until he got it so he could wind in, especially if the fish came in towards him. But he rather enjoyed overcoming difficulties of that kind, and I never saw him lose a good fish from that cause, hardly, indeed, from any actual break except in striking; he used such fine gimp that now and then the teeth of a heavy pike cut it when he tightened on the fish.

THE SCHOOLING DOUBLE-HAND OVERHEAD CAST

This is so well illustrated and described in the pamphlet which Messrs Allcock & Co., of Redditch, will send to any angler who writes for it, that a long description is not necessary. One of the great difficulties I encountered, when learning to cast from the American multiplier casting reel, was to time the "release" properly, i.e., to take the thumb off the line on the barrel of the reel at the proper moment. When using the Schooling direct overhead double-hand cast I use my ordinary Jardine pike rod (in sea fishing I use one of Mr Schooling's special patterns, with long cork handle and movable reel seat), with an American multiplier or other casting reel fixed on the butt, so it is on top of the rod, between the hand grips when I am winding in, with handles towards my right hand. The long cork grip and absence of metal fittings is very comforting in frosty weather. Holding the rod, with the bait wound up to within a couple of feet or so of the rod point, you grasp the cork butt well forward with the right hand, with the thumb pressed on the top of the rod *and the line held between the thumb and the cork* (in heavy weight casting I use a kid glove thumbstall on both thumbs). The left hand grips the rod below the reel so that the thumb can rest on the bar of the reel, and at the same time, when necessary, can press on the line on the barrel to check it gently as the bait flies out, and stop it suddenly at end of the cast. Then I put the rod over and behind me, much as one would do if one had to chop a head off with a two-handed sword. The rod points out horizontally behind me, the bait hanging down. To cast, I drop the point down a little more behind, and then bring it, not with a jerk, but with a steady strong sweep overhead, and then, just at the right second, the line releases itself from between my thumb and the cork handle, the reel starts with the pull, and the bait

flies away in an almost perfectly straight line. In practising at a fifty yard mark (an old oval tea tray with a bull's eye painted on it stuck up on the lawn) with this overhead cast and this automatic "F.G. Release," I have often made fifty casts all within three yards of the target, and at least one or two hitting it with a resounding "plump." My four sons are all better than I am at this overhead Schooling cast, and all use the thumb release, and so does my wife, who always uses it in actual sea fishing, casting from piers, etc., and in spinning for pike. By the way, there was an article in "The Times" on sport recently* in which the writer tried to make out that angling is not a sport for women. All I can say is that if the writer is an angler, I could wish him no better fortune than to have a wife who can cast a fly well, or a sea or pike bait from thirty to fifty yards from the reel, and who at the same time is really keen. I have known and fished with a great many anglers every year for fifty years, and I can honestly say that for keen enjoyment of the sport, and for sticking to it in any weather, very few would beat Mrs M. and some other ladies I have met.

As, of course, no one but an angler is likely to read these lines, or one who feels a desire to become an angler, I need hardly say what a blessing it is to have a wife who is always ready to go fishing, and always the last to have a final cast at the end of the day. And this reminds me that I forgot to mention a reel for bait casting called the "Facile," made by Mr Washbourne, of Reading. Mrs M. has used it for some years, and prefers it to any other. It is inexpensive, strong, and very light, especially in the barrel; I know no other reel quite so free from the bothering "overrun" as the "Facile"; the reason is that there is next to no weight in the barrel at its outer edge, and so a very slight silent check, which you apply with a screw, causes the reel to stop running almost automatically at the end of the cast, and you do not have to control it at all with the fingers during the cast. Mrs M. uses the overhead Schooling cast with a short light rod, uses the thumb release, which I described, and simply lets the reel run until the two- to four-ounce sea weight and tackle is dropping into the sea, and then just touches the reel to stop it. I mention this particularly because I have known so many anglers give up trying to cast from the reel because of overruns, and I am quite certain the "Facile" and the thumb release would have enabled them to master it, both for sea fishing and spinning for pike, etc.

*June, 1912.

The advantages of the double hand "Schooling" overhead cast are great; it enables you to send your bait straight out just where you want it to go and to any reasonable distance; the longest measured cast with a two-and-a-half ounce bait I have made was just over eighty yards. I have taught several friends (some who had never tried to cast in any way before) to do fifty yards, within five minutes of beginning, and this almost entirely because of the automatic thumb release. By the way, I think I have previously mentioned, but it is worth repeating, that, after making any cast from a reel the rod should be *stopped and held* with the point at an angle of about 45 degrees. Do not drop the point of the rod *at all*, until the bait is about to fall into the water at the end of the cast. You want to keep the rod pointing in the same direction as the line is travelling. If you drop the point you just for a second break the continuity by making an angle in the line, and that is often sufficient to allow the reel to take a few inches of line round the barrel instead of going through the rings, this causing a sudden check and a tangle on the reel, and even a break if it is a fine line. For this reason never use a spinning rod with any double action; after the cast the rod should not wobble up and down, but come to rest stiff and straight, so the line can flow out through the rings in a perfectly straight line.

A great advantage of the overhead cast is that you can make it from cramped positions where the side swing would be dangerous or impossible; so it is invaluable on crowded piers, or on a river or lake where trees and bushes leave only narrow openings overhead; again in places where you have to avoid boughs overhanging the water.

The disadvantages of the overhead double-hand cast are, chiefly, that the smaller the diameter of your reel the better it is suited to the overhand cast; this means that large sea reels which one can use with the side swing are next to useless with the direct-overhead. The bigger the diameter the sooner it pulls the bait down; probably the reason is that the big reel does not give off line quickly enough; in the side swing this does not matter so much, because the pull is sideways, and not straight down, and the angler soon gets to allow for the side pull, and, if casting from the left side, sends the bait well behind to his right, so as to get a good long swing. The reasons I have given may be wrong, but they are all I can think of to account for the fact that, using the same rod, weight, and line, with a small diameter American multiplier, I can easily and with comfort cast a much longer line than with any reel of double the diameter, i.e., in overhead casting.

Another disadvantage of the overhead cast is that the bait falls with a greater splash—with more force in fact—than with the side cast, or with the underhand "Boyne Cast"; this does not matter so much in sea-fishing, as in pike fishing or salmon fishing—especially in hard-fished waters.

CASTING FROM A TRAY

Casting a bait can also be done with the basket or tin line carrier strapped to your left side—under your left breast coat pocket I mean—in the way that clever angler, Mr Philip Geen, uses so successfully in spinning for salmon and pike and trout. He uses a single-hand rod, pitches the bait out very accurately and lightly, the line being coiled in his tray with a little water in the bottom of it to prevent it being blown out or about; then he draws it in with his left hand and drops it, in coils, into the tray. The advantage is that you carry your little smooth platform with you and can stand in a bed of thistles and cast as in the old Thames style, with no revolving reel to manipulate, and with the very minimum of force. Mr Geen uses a special tin holder, in shape like a creel with a low front. An old trout creel, cut down in front and lined with oilskin smoothly, to cover all projection that might catch the line, and to hold a little water, which Mr Geen finds so useful, answers very well. The tin affair seems to me unnecessarily heavy, though Mr Geen does not find it so; he tells me he does not even notice he has it on.

Of course the more line you have out the more chance of a kink, but in the ordinary fishing cast for trout, pike, and salmon, Mr Geen tells me that he very rarely has any trouble. When you hook a fish you have to get the line on to the reel as soon as may be; generally the fish runs out the slack, and then you are ready to play him from the reel. For casting the lightest of baits there is no lighter way than this, as the bait has only to pull out the weight of the line.

CASTING FROM A REEL WITH A STATIONARY DRUM

The Malloch Casting Reel, brought out by that fine salmon and trout angler, Mr P. D. Malloch, the well-known fishing tackle maker of Perth, was the first, and for over twenty years or so the only reel, in which the line, in casting, comes off a stationary drum or barrel, which only revolves when you want to wind in after a cast or when you are playing a fish. It

is too well known to need description; it has been the means of killing thousands of salmon and other fish. In casting, the drum, which turns on a pivot, faces the rings of the rod, and the line is pulled off by the bait as it flies through the air, just as if you wind a bit of thread round the end of your thumb or finger you can pull it all off sideways. The only objection is that it kinks a fine line; though this objection is partly got over by having a bait which spins the reverse way and takes the kink out, and in having a double swivel at the end of the reel line.

It is perhaps the easiest of reels to learn, as there is no overrunning and its practical value has been proved by the thousands of anglers who use it.

THE ILLINGWORTH CASTING REEL

For light bait-casting the Illingworth Casting Reel has a great many admirers; the principle is the same as that of the Malloch, the line casts off a stationary holder or drum. I think the No. 2 " Illingworth " is a great improvement on the first one; it is used with a short single-hand rod, similar to that used by the Americans in single-hand bait-casting, but can be used with almost any rod, and is admirable for casting a light minnow tackle for trout and perch, or casting a light float tackle. The reel line is very fine, but strong enough, with care and not too stiff a rod, to kill almost any trout. Mr Illingworth has, I believe, often killed salmon on it; illustrated descriptions and directions for use can be had of The Illingworth Casting Reel Company, of Bradford, Yorks.

CASTING A SPINNING BAIT IN THE " BOYNE " STYLE

In addition to the side swing and the overhead cast, there is a very excellent and accurate style of casting from a reel which, as I said before, I have called the " Boyne " underhand cast, because I believe it was first generally used by salmon anglers on the Irish Boyne. The action is like that of the old underhand style of bowling a cricket ball. It is used now by some of the best salmon anglers on the Boyne, Wye and other rivers, and, of course, is equally useful for pike, trout, etc. For salmon and pike a double-handed spinning rod of about twelve feet is usually used with a " Silex " salmon reel. In casting, supposing the angler wants to drop his bait forty yards or so opposite to him across the river, so that he can

let it sink a little, and then wind it in slowly so it spins deep just over the heads of the salmon lying close to the bottom (preferably when, by wading, he can pull it straight up stream over their noses). To do this, the angler stands with his left shoulder pointing towards the place where he wants the bait to fall at the end of the cast, and facing up stream. So he stands sideways, the bait being wound up so it hangs from two to three feet from the point of the rod. The right hand holds the butt above the reel, with the left hand below it to check it; the rod is held almost straight up, so that the bait can be swung almost exactly as a pendulum swings, with a short U-shape motion to get swing on it, and then with longer U sharp sweep by which the bait is pulled sharply down, then lifted up with an underhand side swing, just as the bowler swings the cricket ball in the old underhand style, his hand holding it is swung back behind him, then down past his side, and released in the upward swing, which lifts it, at the same time giving it the straightforward motion. In the same way the angler lets the reel go during the upward lift of the swing, and the bait flies straight and drops lightly. Some of the best Scarborough Rock anglers use a somewhat similar underhand swing and lift, though not quite the same. The great advantages are that you get all the distance you want for ordinary salmon pike or trout fishing, and can cast very straight, and, above all, very lightly. At the end of the cast, when the reel is checked, and the bait falls gently into the water, the rod is passed from the right hand to the left, the button pressed against the left side, and the right hand slowly winds in; so long as the bait spins and does not catch in the bottom, one can hardly wind too slowly, especially for salmon. Any good spinning reel that you can use to kill salmon and pike and good trout on, and which suits you, is the one to use.

SPINNING FOR PIKE

There can be no doubt that spinning a dead, natural, or artificial bait is the most artistic and sportsmanlike way of angling for pike, but it cannot be said to be the most deadly way, because its use is limited to comparatively open water, free from weeds which foul the hooks. Mr Jardine was a very clever hand with the spinning bait, but he often told me that his experience of over sixty years of pike fishing, in some of the finest pike waters in England and Ireland, had taught him that, for fish over ten or twelve pounds, either float fishing or paternostering with a

live bait was much more deadly. Of course heavy pike are often taken on a spinning bait, especially by trailing in the big, deep Irish and other lakes, where live baiting is rarely resorted to. I remember many years ago discussing with Jardine the best way to get the record Irish pike, and he said he believed, in such a large expanse of deep water, generally with a rocky bed, such as Lough Mask, a large, slowly-revolving, slowly moving, natural dace, with some sort of phosphorescent or other luminous attachment would be the best way, because there are few weeds as a rule that you cannot see, and those chiefly in the bays where there is deep water just outside them, and by slowly spinning round the sides in ten to twenty feet of water he would expect to find his monster. He said he should construct a special bait to spin slowly, and yet not sink too easily, to try on the Shannon with a wire trace, as on some visit in the seventies he had had his best gimp tackle smashed by enormous fish when fishing near Athlone. He had seen and admired the splendid pike from Athlone which I had had set up, which weighed full thirty-seven pounds some days after it was caught, said to be caught by a local professional fisherman with rod and line, but I could never get at the real facts, and am inclined to think it was caught in a net, or more particulars would have been forthcoming. The difficulty about live-baiting in Ireland is to get the live bait, and some English anglers have gone to the trouble of taking over a supply of Thames dace, but I never heard that their success was sufficient to lead them to repeat the experiment. Personally I would much rather trust to a supply of preserved baits. I was going to say preserved in formalin, but I know some good pike anglers who seem to think formalin repels pike at times; that a pike which has had hold of a dace, not long out of a bottle with formalin preservative, does not come at it again so readily. A salted bait, on the other hand, is decidedly attractive to fish of prey, and it might be a good plan to wash the baits preserved in formalin in salt and water and leave them over night with some salt sprinkled over them. The beauty of formalin is that it keeps the dace, etc., bright, and makes them tough, and does not shrivel them up, like salt, if left too long in it. For spinning a large dace slowly with a wobbling spin I doubt if there is any better tackle than that known as Storr's flight, after an old London pike angler of that name who fished the New River reservoirs regularly some thirty or forty years ago. It is simply a large strong triangle (varied in size to suit the bait) on a length of gimp with a loop. With a baiting needle the gimp is passed through the fish from the vent to the mouth

and then pulled until the fish is bent a little, then the gimp is passed under one gill and out of the mouth, and then under the other and again out of the mouth.*

If desired, a second triangle or single hook on a short length of gimp can be passed down the gimp of the first triangle and secured to the bait's side, but I think that Mr Storr rarely used more than the one large triangle at the vent, and he was very successful with it. A bait which slowly wobbles over and over, as this does, is often very attractive, and you can fish it as deep as you like and put a lead in the mouth, on the gimp, before you thread it through the gills—doing the latter helps to keep them distended a little, and adds to the wobble effect. Another excellent tackle is Farlow's Pennell-Bromley Flight, which is illustrated and described in their catalogue; it is made in three sizes, and is probably as good as any for spinning a dead bait without the use of artificial spinners.

Formerly the Thames spinning flight was the one chiefly used by anglers in spinning for large trout and pike. It is one any angler can easily make for himself by whipping three triangles, one above the other, on a bit of gut or gimp with a movable single lip hook. The secret in putting a dead dace or other small bait on to this tackle is always to put a hook of the lowest triangle into the tail, just above the tail-fin, *first*, then pull on it gently to get the tail bent a little sideways, then insert a hook of the second triangle in the side to keep the tail bent, then one of the upper triangle nearer the head, and finally the lip hook is adjusted so as to get a straight pull on the bait. I always think that any bait, artificial or natural, which spins from a bent tail gives a more attractive spin than one worked by spinners at the head. This was one secret of the famous old "Hawker" spinning tackle for natural minnow for trout, that and the big single hook. It was described by Colonel Peter Hawker, one of Wellington's officers in the Peninsular War, in his famous "Hints to Young Sportsmen." The late Mr William Bullock improved it and used it with most deadly effect both for trout and pike.

There are many good tackles sold now for mounting a dead natural bait on so that it will spin when pulled through the water. The original "Chapman Spinner" has killed thousands of pike; its chief defect was that the dace, or gudgeon, or sprat was not held firmly with the head close

*Instead of triangles single hooks can be used, and with many advantages—of course they should be larger than the hook of a triangle.—R. B. M.

up to the two metal fins or blades which cause it to spin, so it worked loose, and often got thrown off in casting; several improvements on the original form have been brought out in which the bait is very securely locked to the spinner—two of the best are Messrs Hardy's "Crocodile" spinner for dead bait, and the "Mirror" spinner and another like it brought out by Messrs Wyers Frères, of Redditch. The mirror is easy to mount a bait on, holds it very firmly, and the extra large fans or blades of the spinner give a good spin even in dead water, and give off flashes from the flat silvered surfaces which call the pike's attention to it, especially in slightly coloured water. Some years ago Messrs S. Allcock & Co. brought out a soft rubber imitation dace which answers very well on these spinners when the natural bait is not to be had. They also brought out an imitation "eel tail" bait, but it was made of some hard material like gutta-percha, and I am sure there is an opening for a good soft rubber "eel tail." For salmon and pike Mr P. D. Malloch, of Perth, makes an excellent tackle for spinning a big natural sand eel, which he supplies preserved and ready for use; a little fine copper wire is wound round the eel to hold it securely to the flight of hooks, its head is cut off, and its body is pushed up into a hollow metal head, like that of a "phantom" minnow. It is very deadly for salmon.

Spoon baits, with a small bunch of red feathers fastened to the triangle, are very useful spinning baits for pike and perch and salmon and Mahseer, only the swivel and hook should be fixed to the spoon securely with brass wire links, not with split rings, as the water gets into the split and soon rusts the ring. I have lost good pike and bass from this cause.

In spinning for pike, the best fish are usually got by keeping the bait only a foot or so above the bottom and spinning slowly—a bait pulled rapidly through the water near the surface is likely to attract only the smaller fish. It is very enjoyable sport on a bright winter's day to walk along the bank of a good pike river or lake, to cast your spinning bait out from thirty to fifty yards, and, as you wind in, drop your rod point now and then towards the bait, give it lift, and wind in again, so as to vary the monotony of the straight spin, and then to feel it seized by a good fish, often to see him come at it, with a dash, at the last moment. The thing to do then is not to give a heavy strike, which may break something, but to "tighten on the fish," that is, to lift the rod back without a jerk, so that it becomes bent against the weight of the fish and *keep it bent*, and well

up, so that he never gets a straight pull on the line to the reel. Put the check on the reel, if it has one, and, in addition, hold the line pressed against the rod by the hand which grasps it above the winch. If a good fish makes a sudden rush when the line is loose and merely pulled off the winch it is quite likely he will be able to shake the bait out of his mouth, as he often tries to do, at the end of a run, whereas, if you can keep the line taut his effort will very likely fix the hooks in firmly. A pike will hold a natural dead bait firmly between his jaws, and make a good run with it in that position, and you may think he is well hooked, and then the bait comes away; what has happened is what I have just tried to describe; the bait was only held, not hooked into his jaw, and he shakes it out. Of course with a hard metal or other bait, he tries to eject it at once.

It is well to have a few leads of different sizes for your spinning trace. I prefer strong stained gut with a short length of fine wire next the bait to the old-fashioned gimp, which is unreliable, even when new, and looks much stronger than it is.

LIVE-BAITING FOR PIKE

Any small live fish can be used: dace, roach, gudgeon, or even perch, in live-baiting for pike. Gorge-bait fishing is, I am glad to say, quite out of fashion, and whether one fishes with float tackle or paternoster tackle, or trolls a dead bait in the old gorge-bait style, there is no giving the poor pike five minutes, or even longer, to gorge the bait; the striking, or rather tightening the line on the fish, as previously described, is done in less than a couple of minutes after the bait is taken. The Jardine two triangle snap tackle for float fishing with a live bait is the best ever invented, and is sold everywhere. I hope that some day we may all come to discard the use of triangle hooks in all kinds of fish. One or more single hooks standing out well from the bait should be all we need, either for hooking or holding, and they are far more humane. If a fish breaks your line and gets off with one or more triangles in his mouth he is practically doomed, as he may have his jaws or his throat locked by the hooks of the triangle, and so must starve, or may even be suffocated if the mouth is held firmly closed. I feel sure that every angler who wishes to give the fish fair play will agree with me on this matter; in some parts of the United States the use of more than two hooks on a bait is illegal. Far more

fish, from salmon and tarpon, down to minnows, are caught on a single hook than with more than one. To bait the Jardine snap tackle for pike a hook is put through the back fin at the base and another at the angle of the mouth (and I am sure two fairly large single hooks would be as killing as two triangles); a pear shape cork float is put on the line at the depth you wish the bait to swim, with a lead on the trace a foot or eighteen inches above the bait to keep it down. The bait and float are cast out gently into likely places, you wait till the pike float is pulled under, and then wind in the slack line until you just feel the fish, count sixty, and then tighten on the fish without a jerk and keep a steady pull on him to get the hooks in. In playing a pike the chief point to remember is that although he does not often make a quick, dashing long run like a salmon or trout, he very often, after coming in quietly for a few yards, gives a sudden vicious heavy plunge, and if you do not instantly give line, something will break, if it is a fish of any size—even if it is only the hold in the fish's mouth. Jardine's thirty-seven pounder gave him a great fight, the fish had often been hooked before, and had learned by experience; when over fifty yards away from the boat it jumped clean out of the water like a salmon does. I have frequently had small pike jump out as I was playing them; and fish in a good strong stream fight, as a rule, better than lake fish. As regards the size of bait for live baiting a dace of about five inches is what I prefer.

PATERNOSTERING FOR PIKE

I infinitely prefer "Paternostering" for pike with a single hook, and so I think did Mr Jardine when the water was clear enough of weeds for that style of fishing. The "Paternoster" tackle is very simple. A yard of medium salmon gut, stained blue with Stephen's blue-black ink, with a loop to fasten it to the reel line. I prefer a green undressed plaited silk line of about twelve pounds breaking strain. At the other end of the gut I have a good strong buckle swivel, to which is attached a foot of trout gut, with a small pear-shaped "pater" lead; the object of having the trout gut is that if you get "hung up" it will break, and so save the rest of your tackle. About fourteen or sixteen inches above the lead on the salmon gut make a loop—I prefer making it by whipping with strong waxed silk to making a knot in the gut. This loop is to loop the hook-length to, say, six or eight inches of really good gimp, or, as I prefer, plaited

wire. I think it is eight to sixteen strands of very fine wire plaited, it makes a soft, pliable bit of line, is very strong, and not easily cut by a pike's teeth, like gimp is, or gut. The single hook should be about seven-eighths of an inch long in the shank, and three-eighths of an inch across its gape from point to shank, with a square bend and slight "sneck," i.e., with the point twisted slightly to one side, not quite parallel with the shank. The dace or other fish is baited by passing the hook through the upper lip, or through both lips, when the straight shape enables the bait to breathe freely. One good pike angler advises putting the hook down through the top lip and then through the bottom lip, and says he finds this hooks a pike or perch better. Having baited your tackle, all you have to do is to cast the bait out lightly by one of the methods described, let it sink to the bottom, wind up the slack gently, so you can just feel it anchored by the lead, then wind in a yard or two, wait a bit, and repeat this until it is wound in to the boat or bank, always keeping the line tight by holding the rod up. Very often a pike will take the bait directly it sinks to the bottom; to be sure it is a fish and not a weed hold the rod quite still with the line just taut, and wait a few seconds. If it is a pike he will shake the line and slowly move away; let him take out line till he stops, then wind in as you lower the rod towards the fish, then hold the reel, and bring up the rod steadily without a jerk, and keep a good strain on it to get the hook in. In this style of pike fishing you can carefully search every likely bit of water, deep or shallow, as the keeper or a friend slowly rows the punt or boat along, or as you walk along the bank. It is much the least injurious way of fishing with a live bait, and it is a very deadly way of presenting the bait to the pike. Then, if you come to water which is too weedy at the bottom for the "paternoster" you can slip a "Fishing Gazette" or other pike float on to the line and the same bait and tackle are ready for float fishing.

GAFFING A PIKE

Jardine and I gaffed hundreds of pike for each other when fishing together, and we invariably preferred to put the gaff under the head of the fish and slip it in by a quick upward lift, into the wide flat under-part of the jaw, and then quickly lift the fish into the punt or boat or on to the bank. The gaff is held vertically so the fish hangs like a pot does from a long hook over a farm-house kitchen fire, and there is no side strain

on the gaff handle. In this way there is no ugly gaff mark in the side of the fish, and if it is under size, or you do not want to keep it, it is not injured. If a net is used it should be held in the same way in lifting the fish out, i.e., with the net handle vertical during the lifting.

12-lb. PIKE AND 1½-lb. TROUT.

It is often stated that pike always seize a fish across the body and do not swallow it tail first; in the majority of cases this may be the case, but I have seen many exceptions. For instance, the 12-lb. pike here sketched swallowed tail first the 1½-lb. trout which I had hooked when fishing in the river Pydel, near Wareham, Dorset, with a mayfly. He swallowed so much of the fish that after an exciting fight I was able to land both. When the pike saw me he tried all he could to disgorge the trout, but his big in-curved teeth were too firmly fixed in it, and fifty yards lower down the stream I got my trout landing net over the heads of both fish, and by good luck got out both; it is proof positive that a pike will swallow a fish tail first at times.—R. B. M.

THE PERCH & PERCH FISHING

PERCA FLUVIATILIS

German, *Der Barsch;* French, *Perche*

By R. B. MARSTON

PERCH spawn in pairs between the end of March and the beginning of May; later in cold than in mild seasons. The eggs, about the size of millet seed, are joined together like little pearls on a thread, and this chain is intertwined and enveloped in a delicate film in such a way that a band of perch spawn hanging on the water weeds or roots under water, looks like a delicate piece of muslin. Even a half-pound perch may have from two to three hundred thousand eggs. As I mentioned before, at the Great International Fisheries Exhibition of London in 1883 I read a paper describing a very simple system of perch cultivation by means of the Lund hatching box, which has been in use in Sweden for generations—the perch there being justly valued as a good and nutritious fish. It is more than thirty years since my old friend, Mr William Senior, so long the angling editor, and afterwards editor in chief, of "The Field," impressed upon me that two of our so-called coarse fish, viz., the perch and the tench, from good wholesome waters, and properly cooked, are not merely eatable, but very good eating. But to return to the Lund perch hatching box. It is really nothing but a large frame like a cucumber frame which has holes bored in the sides. It is put into a lake at some shallow place where you can be sure the water will not wash over it or wash it away—a few pea sticks or fir branches are placed inside, then one or two pairs of mature perch are put in, and after they have spawned are caught with a landing net and put into the lake or wherever you want to keep them.

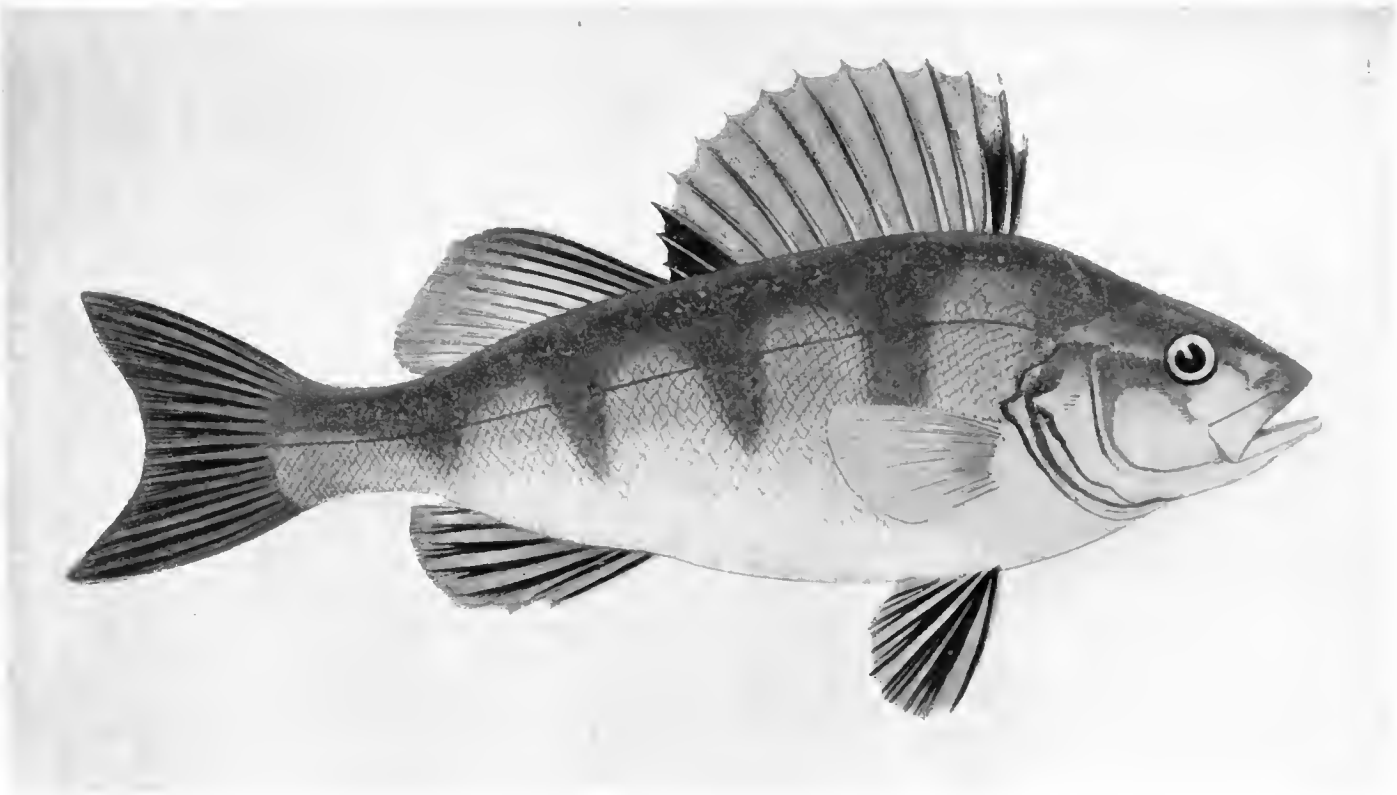
It will be seen it is merely protecting natural spawning, as swans, ducks, and other water birds do great destruction among unprotected spawn. For stocking other waters the bands of perch spawn can be carefully lifted into carriers and transferred to where required. In this way the spawn of pike, perch, and other fish has often been carried by water birds from one water to another—especially when it is spawn which adheres to weeds, stones, bushes, etc. It is difficult to imagine that birds could carry salmon or trout eggs, because they are distinct, non-adhesive,

smooth little balls like peas. It is just possible that a wild duck might swallow fertilized trout eggs, fly away fifty miles, and then be compelled involuntarily, by a shot or attack of some kind, to vomit the eggs into another stream.

Anglers who have only fished for perch in waters where they are very numerous and run small in size, have no idea what good sport this handsome fish affords when fished for in really good perch waters and with fine tackle. Formerly, if you asked for perch tackle at a London or other fishing-tackle shop you were expected to require a perch paternoster, i.e., a strong piece of salmon gut a yard or so in length with a loop at each end—one to attach it to your reel line, the other to attach a foot of finer gut with a small pear-shape plummet to. At equi-distant points on the gut a small perforated bone ball the size of a pea was threaded on to the gut and held in place by shot or knots—the little bone pea had a groove round it, and round and in this groove the end of a bristle was secured, on the other end of which was a strong perch hook. It was called "paternoster" because it was, when there were three of these little revolving balls and hooks, one above another, something like the beads of the breviary.

It is many years since I saw one of these original "pater" tackles in use for perch, though all kinds of modifications of it with metal booms to stand out at right angles from the gut are now used in sea angling. At the present day the useful "pater" tackle for perch and pike is much finer in every way—loops in the gut replace the bone bead and to these loops are attached the loops of the finer gut holding a small hook some six inches away from the gut line. Two hooks, one for worm and one for minnow or small gudgeon, are quite sufficient. As regards size it is only confusing to give hook numbers, because different makers have different numbers for different sizes, but a hook three-eighths of an inch in width at the gape, i.e., from the point across to the shank, is quite big enough for any perch. The two biggest I have ever seen came from a reservoir near Daventry, and weighed about five pounds each, but a perch of two pounds is by no means common, and in the Thames and most other public or semi-public waters a perch of a pound is considered a good fish.

In this country the only other freshwater fish like the perch is the pope, or ruff, which never exceeds two or three ounces in weight, and is of no account as a sporting fish. It is, fortunately, not found in all waters, as it is a bold biting little fellow, and gets the bait you have prepared



PERCH.

for more valuable fish. It is common in many of the East Anglian waters. I have tried once or twice, and so have others, to introduce the pike-perch (*Lucioperca sandra*) into some of our waters suitable for it, but the attempt did not succeed. We tried eggs, but I feel sure young fish in large numbers have the best chance. The pike-perch is the same fish, or almost identical with, the glass-eyed or wall-eyed pike of America. It is not nearly such a broad fish as the perch; it shows traces of bars on the sides, but not nearly so distinct as the dark bars or stripes so often, though not always, seen on the olive green sides and back of the perch, which vary in number and remind one of the bars or finger marks on most of the salmon and trout family for a year or so after birth.

In angling for perch the "paternoster" tackle, referred to above, is one of the best, because it enables you to offer him a choice of baits; and a healthy perch which can refuse a lively brace of red worms, or a minnow or small gudgeon or other small fry, must have dined well just before you tried for him. For it adds to the interest of perch fishing that you can so often see your fish in a clear stream or lake—the strong stream itself he avoids, but loves a quiet deep hole near the stream, as the eddy from it brings him all kinds of food, especially the shoals of minnows and small fry, into which, with fins erect and bristling, he dashes like a fox among the farmyard fowls. Often he is so intent on his hunting, that if you keep still he will—as will the pike and trout—chase the fish almost out of the water at your feet.

With a light whole-cane fly-rod and a quarter-ounce "pater" bullet and fine reel line you can cast the baits very lightly where you see the perch, or think they are likely to be found. Especially try, as Walton says, near bridges, weirs, near campsheathing under water, between weed beds, and, in fact, all round the sides of a lake or river rather than out in the middle, because the perch come out of the deeps after the minnows and other small fry, which always are drawn to the sun-warmed shallows, where they in turn can find their minute prey. Where perch are much fished for they become bait and tackle shy, and in such cases I have often had good sport by casting a well-scoured lively red worm on a single hook with a tapered drawn gut fly cast like a fly, no lead, just allowing it to sink slowly near the biggest perch you can see. If he does not sail up to it and draw it in with a gulp of water, draw it gently away, and then he is pretty certain to have a race with one of his friends for it. The single small hook hooks and holds him well, and on the fine tackle and fly-rod

he gives a very good, if not very scientfic, fight. If he runs you into weeds it seems to be more by accident than design, as in the case of the trout. I have had all sorts of fights with all sorts of fish from salmon down, but for cunning and for testing fine tackle to the utmost give me a trout of about two and a half pounds to three pounds.

Perch, when healthy and hungry, will rarely refuse a good live minnow, worm, or freshwater shrimp, or the shrimp of brackish water, which can be caught in a gauze net in the tidal waters of East Anglia, and makes a deadly bait for a perch. For spinning for perch a smallish silver or gilt spoon is as good as anything. I have taken him on a small spinner, just a screw blade behind a swivel, like the "Halcyon," with two or three red worms on the hooks.

Dr Karl Heintz, in his very charming "Angelsport im Süsswasser" ("Angling in Freshwater"), says that exceptionally large perch up to six and eight pounds are caught in the Laacher Lake, near Kloster Maria Laach, in the Eifel. I should like to make a pilgrimage to get some of those fellows!

Perch are found in nearly all parts of the United Kingdom, although Couch thinks they were not introduced into Cornwall until last century, or to Scotland north of the Forth.* I have caught perch of between one and two pounds' weight when spinning a spoon or minnow for salmon on the Bann, in Ireland, also when spinning for salmon on the Wye, in Herefordshire. The biggest perch I ever nearly caught was a great fellow, certainly over four pounds, which followed my ledger lead as I drew it in after fishing out in a deep hole in the Severn, near the fascinating remains of Roman Uriconium. The water was very clear, and I saw this splendid perch following, and every now and then dashing at my ledger lead as I drew it along the bottom. Twice the fish did this, for it came out of the depths exactly in the same way after a second cast out. The lead being long and somewhat fish-shape, attracted it, whereas the fine worm, a foot or so behind it, was ignored. Linnaeus says the Laps make a wonderfully strong glue out of perch skins. Four or five large skins are dried, then soaked in a little cold water, so the scales can be rubbed off. Four or five are then wrapped together in a bladder, so the water cannot get to them, and then set on the fire in a pot of water to boil, a stone being placed over the pot to keep in the heat. This glue is

*Colonel Thornton reports, in his *Sporting Tour*, having killed upwards of ninety perch in Loch Lomond on July 1, 1786, one of them weighing 7 lb. 3 oz.—ED.

BANK FISHING ON THE LEA 100 YEARS AGO.
From an old engraving.

used for splicing their bows, and is said to be so strong that articles joined with it will never separate. Somebody had better set up a glue factory on Windermere to use up the perch skins to make glue for split-cane rods, etc.

In "The Fishing Gazette" of March 2, 1912, I gave particulars from the investigations of Dr J. Arnold, of St Petersburg, to ascertain the age of various freshwater fish from the rings on their gill-covers and in sections of their backbones. He found that a perch fourteen and three-quarter inches in length, one pound three ounces in weight, was eleven years old; one of nearly sixteen inches in length, and two and three-eighth pounds in weight, was fourteen years old. Temperature and food play the chief parts in the rate at which perch and other fish grow. They can exist for years without increasing in weight or size.

In shallow lakes perch can often be taken on a sunny day by fly-fishing for them; a "Pink Wickham" is a good fly, also a "Red Palmer" and a "Black Palmer" with a red tag.

THE CARP & CARP FISHING

CYPRINUS CARPIO

French, *Carpe;* German, *Der Karpfen*

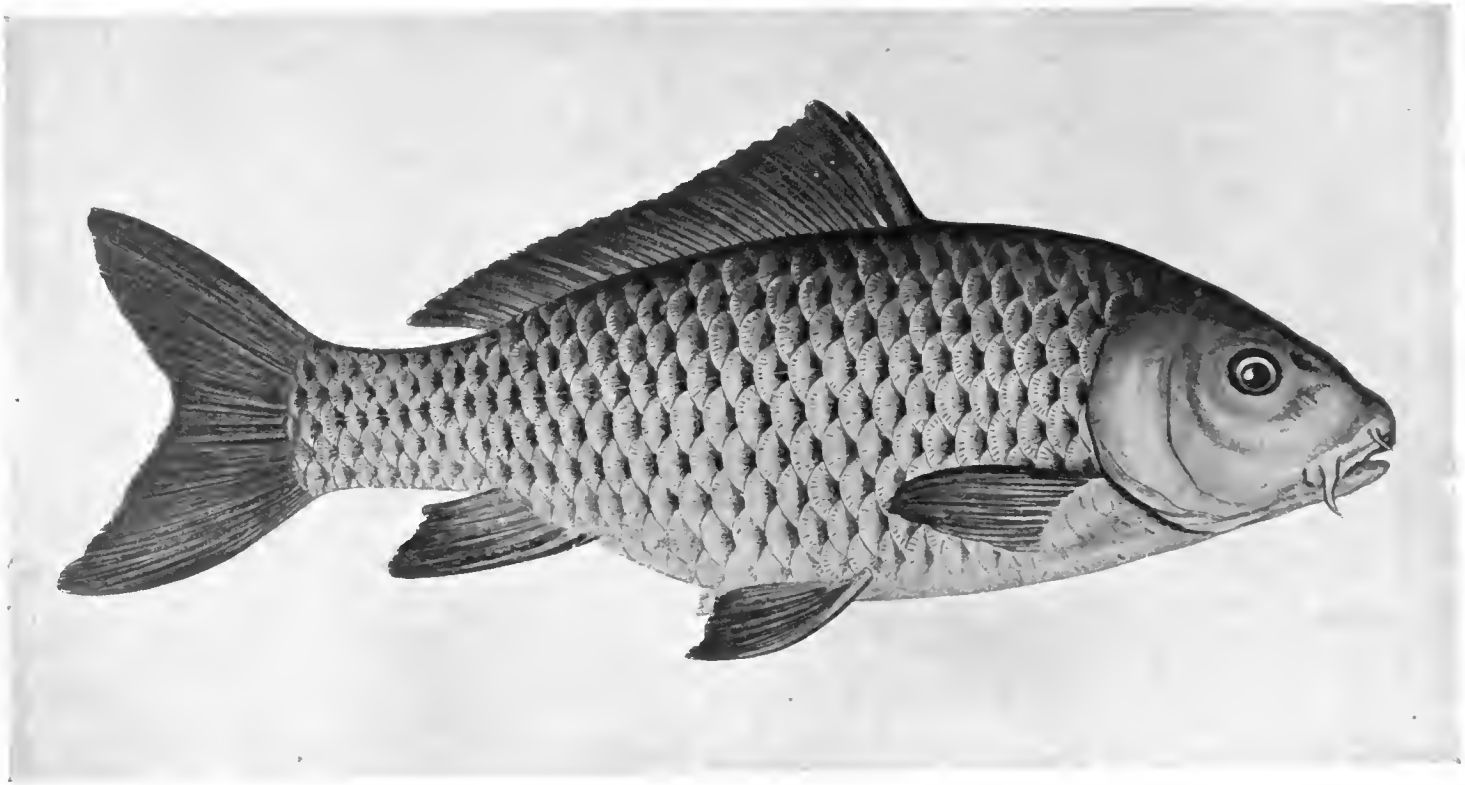
By R. B. MARSTON

THE carp is said to have a bigger brain than any other fish—Walton calls him the water fox.

Formerly, before railways and good roads made it possible to bring our wealth of fine sea fish into all parts of the country, carp, tench, and other fish were much more highly valued as food than they are now, and were regularly cultivated in all parts of the country. This doubtless accounts for the fact that this handsome, strong and cunning fish is found in so many of the lakes and ornamental waters in parks throughout the country. Almost every sheet of water of any extent in Midland and Southern England which has existed for any considerable length of time probably holds carp; they are so easily transported from one water to another, and, once established, are so difficult to fish out by any fair means. Although found in many of our rivers and canals, it cannot be considered as affording regular sport like pike, roach, bream, perch, or even tench. There are doubtless many fine carp in the Thames, for thousands have been netted out of reservoirs and other waters and put into the Thames by the Thames Angling Preservation Society and other angling societies, and yet the capture of a Thames carp is an uncommon event. Occasionally a fine fellow is caught by an angler ledgering for barbel, bream, or tench, but very few anglers lay themselves out to catch river carp as they do those in ponds and lakes. I forget the exact weight of a splendid Thames carp caught by my old friend, the late Mr Alfred Mackrill, near Kingston Bridge, over twenty years ago, but it was about twelve pounds; I know he looked upon it as the greatest achievement of his long angling career.

In his excellent work, "British Fresh Water Fishes,"* Mr C. Tate Regan says the carp family (*Cyprinidæ*) is probably richer in species than any other family of fishes, considerably more than a thousand having been described from the lakes and rivers of Europe, Asia, Africa, and North America. Fortunately I am only concerned here with one of the

*London: Methuen & Co., Ltd.



CARP.

thousand, the common carp, which is called in Germany the "Noble or Scale Carp," its body being entirely covered with large strong scales. In Germany the common carp has been cultivated for hundreds of years, and by a process of selection and breeding, two other kinds have been produced from it, one called the "Mirror carp" (*Spiegel Karpfe*), because it has generally only a few scales here and there on the back and belly and a row of extra large ones, like little mirrors, along the side line; the other called the "Leather carp" (*Lederkarpf*), with a scaleless skin like leather. Within the last half century or so these two kinds of the common carp, the "Mirror" and "Leather" varieties, have been introduced into waters in this country, and anglers who catch them have often written to me to ask what fish they are.

The carp is supposed to have been introduced into Southern Europe from Central Asia and from the Caspian and Black Seas and their tributaries by the Romans. Then, in the Middle Ages, the monks are credited with having carried it with them to nearly all parts of Europe, including England. Being a sturdy, vigorous fish, long-lived, and of great vitality, there is very little difficulty in transporting it alive. During the last half of last century it was successfully introduced from Europe to the United States, and has increased so enormously, especially in the Middle and Southern warmer States, as to have become a pest, crowding out more valuable fish, and causing great lamentation among American trout and black bass anglers. It is also now well established in many South African rivers.

The teeth of the carp family are not in the mouth, but at the back of the tongue at the entrance to the throat. Max von dem Borne says that the curiously forked teeth get worn smooth through grinding against its firm horny plate, called the carp stone, in the roof of the throat over the teeth. The carp's tongue, considered a tit-bit by some continental gourmands, is a very thick, swollen organ, full of nerves. The colour of the carp varies very much in different waters. I have seen some from an ancient muddy moat almost black, and tench also, but from clean limestone mud or from clayey waters, even waters which are only clear in frosty weather, the carp comes out a handsome fellow, his great scales shining like reddish burnished gold, shading off in the back to dark olive or brown. I know some delightful old carp ponds. The last I fished with an angling friend who is a keen salmon and trout angler, and yet loves to put in a day of absolute quiet content, on a shady, winding, broad pool shut in mostly

by ancient oaks. The opening I had selected, one of the few places where one could cast out a line into the water, gave one an enchanting view of wood and water, with blue smoke curling lazily from the fine chimney of a real old Elizabethan manor. My friend had selected a spot on the opposite side farther down the pond, and was almost hidden by the reeds growing out of the water and the branches coming down to meet them; but I could see the cloud of smoke when he lit a pipe, and the top joint of his rod pointing across the water to where his red-shouldered float, gently pulled by the line, slanted its white tip back towards the angler. (In fishing for carp in clear water no float should be used; see Mr Overbeck's account of his capture of great carp later on.) My own float was soon well out in the pool with plenty of gut line on the bottom, so that any carp searching for worm, or berry, or bit of soft root, might not be made suspicious by suspended bait or shotted line. A bit of bough projecting from the water made a convenient rest for the middle of the light twelve-foot rod, the butt resting on the bank. The reel, a light Nottingham, holding one hundred yards of fine undressed green silk plaited line, with the thirty yards or so next the float rubbed with "mucilin" or "gishurstine" to make it float on the water. In carp angling it is most important to have a free line—quite as much so as when you are expecting a big trout, which you know to be feeding thirty yards away from his home, is going to take your mayfly which the stream is bringing straight over his nose. The first rush of a good carp when he feels the hook is a thing to remember and to be prepared for. As I was watching a steel blue dragonfly balancing himself on the top of my float I heard a shout from my friend, and was just in time to see a wave caused by the rapid passage of a big fish just under the surface, and then a swirling hole and a yellow gleam of scales. Then the float falling back and lying flat on the water, showed that the big fish had broken the gut above the shot. My friend is a philosopher, but his philosophy did not allow him to renew his tackle immediately. For some time I noticed his float lying supinely where the carp had left it. After lighting his pipe as he sat on a handy friendly fallen tree, with arms akimbo and one leg across the other, he seemed lost in contemplation.

SIZE OF CARP AND SOME CAPTURES OF GREAT FISH

One of the most interesting accounts of angling for carp I have ever

published in "The Fishing Gazette" was by Mr Otto Overbeck, F.C.S., F.G.S., in 1902. He says:

"The carp pond* teems with fish, of which, through a little opening in the weeds, I have counted two hundred within the space of half an hour, the smallest perhaps eight pounds, to such a size, as compared with my seventeen-and-a-half pounder in the water when played, the latter would appear to be but a very medium fish. Come on a cold day, scarcely one will be visible, and in winter not a single fish will be seen, going a long way to prove conclusively that they hibernate below (covered up by) the mud. In fact, when testing the thickness of the mud by crossing the pond in my long waders with the keeper in the punt, I have several times stepped upon one fully a foot below the surface of the mud, and the sudden shivering squirm and "let down" has not been at all pleasant. When frightened they never swim off, but dive instantly into the mud, which goes to corroborate the use of the soft gill cover edges. When the warm days of April come they appear again, and during the summer months spawn upon hot days at indeterminate times. (I caught one of twelve and three-quarter pounds full of spawn in October once.) At such periods their huge bodies may be seen in masses at the rushy margins, half in and half out of the water, like so many pigs wallowing. They are very fond of jumping, whether after flies or not I cannot say; they can often be seen to suck them in, however, swimming so superficially that their back fin is quite uncovered, and moves along like a black sail. This jumping is a very athletic action, since they often rise some foot or so clear of the water, falling back with a huge splash and showing all their orange belly and gold and black large scales, and rich red brown to black fins and tail. Generally speaking, when jumping, they are not feeding.

TACKLE

"Of the methods of fishing, I would point out that the quality of the rod required will depend upon the angler, and matters little, since a novice is hardly likely to inveigle a large specimen of this water fox. My seventeen-and-a-half pounder was caught on an eight-ounce fly rod with No. 12 roach hook; still, I would point out the obvious

*That is, the pond in which Mr O. caught his fish.—R. B. M.

advantage of a long lift to counteract his burrowing tendencies; for allow him once to bury and spread himself out below the mud, and all hope of seeing him again, much less landing him, is over.

"The line, and not less than one hundred yards (but according to the size and the necessities of the pond, of course), should be of light green, fine and strong, waterproof silk; be it remembered that the strength of a line need never be more than the trace, where a break will occur if anywhere. I have once, upon playing a presumptive twenty-five pounder, had to bite off my line from the reel and attach a second reel with one hundred yards, whilst the fish was on the end, as I saw that if I ran short I should lose both fish, line (an expensive commodity when good), and—let us only say possibly—my temper. The line near the trace need only be of this green colour, as they sometimes have a way of swimming towards a strange sight, and a green thread may be taken for a weed, especially if half buried in mud; farther off anything will do, merely have ample room for it if it swells (as it should not if properly oiled).

"The reel should have a large barrel for rapid winding, since carp often run away and then double back at a great rate straight towards the angler to get at the rushes or bank, when one splash and all is over, except perhaps for a faint (or not) sound issuing from near the rod, the sense of which is generally much about the same, although the quality varies.

"The trace must be of a dull water colour of a brownish green, and should never hang or be cast in dry loops of a brilliant nature, especially when the sun shines, which no self-respecting carp will approach. Note, therefore, that it be soaked overnight, and the knots well tried, and then stretched a little by a plummet from the top of the rod when getting the tackle ready. Its strength must be excellent, since it must not be either "drawn" or coarse. In staining, imitate the bottom where you intend to fish. I have even gone so far as to collect some of the bottom, dry it, varnish my trace, and roll it in the dry powder, hook-shanks and all, and fished thus, but it falls off too soon.

NO FLOAT

"End the trace with a flat, irregular piece of lead, and at intervals of, say, one foot, attach two of the very smallest triangles to about

a foot of similar gut. Where the gut trace and hook gut meet, pinch a shot on either side of the knot and one on the hook gut, and we shall find ourselves ready to bait, remembering that no form of float is possible, since large carp at once perceive a rising line. Upon the end lead (placed there to be able to cast far out) put a large lump of ordinary bread paste, flattened so as to lie on the mud and not be buried in it; also over the three shots place one large lump of common paste to hide the union of the gut, flattened also. It acts as (1) ground bait; (2) an attractive object to raise their curiosity; (3) gives them, from its harmlessness, confidence; (4) and last, but not least, leads them into the neighbourhood of the far more attractive pieces of sweet paste on the hooks.

BAIT

"The sweet paste on the hooks may be made of stale breadcrumb made into a paste with dry powdered loaf sugar and honey well kneaded with perfectly clean hands, and not so tenacious as to hinder hooking, or soft, as to soon soak off. It is semi-transparent when well made, and when the hooks are baited, must be dipped in pure honey to avoid 'human contamination,' but make them of a more fishy nature still.

"Carp have largely developed nostrils with curious lids, and I think find bait—even hidden by mud—mostly by scent. It will be noted that these monsters must hook themselves. Of this more anon. A water telescope would be the way to find out when to strike by simple observation. The hook-shanks may be painted bait-colour if dark, since the hook shows wonderfully clear through a thin layer of paste, as it becomes after lying for a time in the water.

"Having cast well out and carefully so as not to cast off the bait, throw a little of a mixture of boiled potatoes and mud with, say, brewer's grains mixed in the form of balls round about the lead and retire to the rushes, lying down close at the reel (the two buttons being first placed parallel to the rod), the whole length of the rod being upon the bank, observing that the line runs freely, and no part of the line rises in the water (fresh line often floats fatally in parts); then lie down (perhaps, preferably, even for *men* and anglers, with a book of a kind to aid in rendering the mind peaceful and patient)

and wait—wait as I have done, for three, or even more, days on end, from absolutely morn (3 a.m.) till dark—wait for a bite, and be thankful when you get it, humour the tackle, fish, and rod, and land him if you can, if not, well—return to your book when your circulation has again become normal.

"One of several things is impossible in carp fishing—namely, to walk on the bank, which I have observed they notice, and fly from, at once; also talking and, shall I add, smoking (being a non-smoker myself), in deference to what I referred to in their powers of scent and their not unnatural dislike of our perfidious species.

BEST MONTHS AND BAITS FOR CARP

"The two last weeks in September and two first in October—after which they retire into the mud for the winter—are, to my way of being brought to believe, the only times to get them. It is then still too warm to retire, and food lessens when paste tempts them. Boiled potatoes (whole) tempt them too, and they may be caught by them, threading the gut through the centre with a baiting needle and then mounting it. We have heard of cherries, (strawberries), plums, (blackberries), peas, (beans), (bananas), (apples), (pears), (grass), and can do nothing with them. Those in parentheses I have failed with. They never touch worms or gentles here, probably because perch get them first, and so one is driven (in order to keep the line quiet) to use a bait only perhaps tench besides will touch."

After giving a long account of a fight with a monster carp, which he lost, Mr Overbeck goes on to describe the capture of a seventeen-and-a-half-pounder upon an eight-ounce fly rod and No. 12 roach hook and fine gut.

"This fish I went at once into the pond to master, as guessing from the long rush that he must be a big one; a smaller one cannot keep this strain on so long.

"The moment the reel started I lifted the rod, allowed him to run out, and being alone, when he was well out and quiet, pulled some line free and took off shoes and stockings. The mud here is only perhaps four inches and water eighteen. I tried three times to get him over the ten feet long and two feet across ringed net, which is alone very heavy, but quite in vain. Then a friend turned up, a trustworthy

sportsman who could be relied on not to dash his net after the fish, and in just about an hour he had him, and we brought the now heavy net in together. On that day they must have been *on*, for I got two: seventeen and a half pounds and ten and a quarter pounds; the day before one of fourteen pound five ounces, which I landed alone (after it had tried hard to dodge the net, as it is well known they will do), no slight job, for the loss of a carp after days of trying is very different to losing other fish, at least to me, the chances of a bite are so slight."

It is a very rare thing for such carp as those described by Mr Overbeck in his capital account to be caught in this country—or any other. He caught his in 1902. About nine years later, in "The Fishing Gazette" of July 1, 1911, the Coronation year of that keen angler, his Majesty King George V, I was delighted to be able to record the capture of two monster carp in Cheshunt reservoir, one by Mr Hugh T. Sheringham, angling editor of "The Field," of sixteen pounds five ounces, and one of sixteen pounds seven ounces, caught by Mr R. G. Woodruff in the same water on the same day—June 24, 1911.*

I wish I had space to give their accounts of their captures. It would be easy, if I had space, to give a great list of baits and ground baits for carp, but if they cannot be caught by those already mentioned it is very doubtful if any others would deceive them.

*In the first half of August, 1913, at the same place Mr Piercy took a carp of eleven pounds eight ounces, Mr R. G. Woodruff one of fourteen pounds eleven ounces, and Mr T. Andrews one of sixteen pounds eleven ounces. I think Mr Overbeck's seventeen-pound eight-ounce carp is the record on rod and line to date August 18, 1913.

R. B. M.

THE CRUCIAN CARP

CARASSIUS CARASSIUS or C. VULGARIS

By R. B. MARSTON

THE crucian carp is found in many ponds and ornamental waters in this country. It is much deeper for its length and more bream-like than the common carp and, like its cousin, the gold fish (*Carassius auratus*), has no beards or barbels. It rarely exceeds two pounds, and can only be considered as a useful fish for amusing young anglers. Mr C. Tate Regan says that an elongate form of the same fish is called "Prussian carp." Couch gives illustrations of both forms.

Many works on carp culture have been published in Germany and France. The most exhaustive general treatise I know, including angling for carp as carried on in Belgium and France, is "La Carpe," by Fernand Serrane, published in 1910 by Charles Bulens, Brussels.

THE RECORD ENGLISH CARP

From Mr T. A. Morris, of West Street, Bourne, I received in October, 1903, particulars of a monster carp.

This twenty-nine pound fish was not a beauty to look at, but it must be remembered that it was photographed some time after it was found, on March 20, 1903, by a keeper at the shallow end of Wytham-on-the-Hill Lake, on the estate of W. Fenwick, Esq. Wytham is a village four and a half miles south-west from Bourne, and eight miles from Stanford.

It is supposed that the fish got stranded in the mud.

THE CHUB & CHUB FISHING

LEUCISCUS CEPHALUS

German, *Der Döbel;* French, *La Chevanne, Dobule;* North English, *Skellie*

By R. B. MARSTON

THE chub, called also cheven and chavender in the old angling books, is a handsome fish, and a great point in his favour is that, although an exceedingly shy fish, in the warm months he rises very freely at flies both large and small—I have taken chub up to five pounds on a small black gnat or other small trout fly as well as on big black and red Palmers. The fat, heavy fly, often sold as a "chub fly," is not nearly so good as one made on a longshank light wire eyed mayfly hook with a good red or coch-y-bondhu hackle, or a black hackle—with a small tag of yellow wash-leather or yellow silk. I always fish for chub with a light split-cane fly-rod of ten feet and under six ounces in weight, both in fly fishing and float fishing, and with fine undrawn gut—in fact the same cast that I use in mayfly fishing where the trout run up to, and over, two pounds.

Anglers who catch a large dace or a small chub are sometimes in doubt as to which species the fish belongs to; but it is quite easy to distinguish them if you remember that the anal fin of the chub is convex and that of the dace concave. Colours and shades of colours vary so much among fish of the same species that colour is not a safe thing to judge by, but in the case of the chub there is one characteristic colour by which I have nearly always been able to pick out the chub, even when but a few inches in length from among the shoal of dace and roach, and that is the dark blue-black tail. In chub over two pounds it is not quite so marked, but it is safe to say that if you see a fish which looks as though his tail had been dipped in blue-black ink you may be sure it is a chub—his thick white lower lip is another mark of the chub. By looking carefully for the black tail and white lip I have many a time saved myself the disappointment in the mayfly season of fishing for a rising chub in a trout stream when I wanted trout and the chub were hardly recovered from spawning. I have frequently seen chub spawning in April and the early part of May in trout streams; a favourite place is the mouth of a small stream, which joins the main river, quietly spreading out over soft sandy ground into

which your brogues sink at every step; a hen fish of between one and a half pounds and two pounds will deposit about 100,000 very small eggs, which sink and adhere to stones, gravel, etc., when impregnated by the milt of the male; like most of the eggs of the coarse fish the chub eggs hatch out in a few days—varying from about a week in a mild spring to ten days or a fortnight in cold weather.

As regards size the finest I have ever caught or seen have been Hampshire fish from the Avon and Stour. My late friend, Mr E. J. Walker, of the London Piscatorial Society, was particularly fond of catching the monster chub which are found in the Avon and Stour, especially within a few miles of Christchurch; he had several over six pounds and one of seven pounds five ounces to his own rod, and he had one set up and presented to the Society, which was found dead and which weighed seven pounds fourteen ounces.

The chub is found in a great many of the rivers of Europe and Asia. Dr Karl Heintz, in his delightful work, "Angelsport im Süsswasser," mentions that in some Austrian waters it grows to a weight of over ten pounds, and that in some waters it becomes almost as bad a fish of prey as an old trout. Although it has no teeth in the mouth, if you put your finger down the throat of a good chub he can give you a good nipping squeeze with his throat teeth, which he has in common with other members of the carp family—including the great Mahseer, Carnatic carp, and the "Bokha" of India. This latter fish is described by Major Alban Wilson, D.S.O., as even a better fighter than the Mahseer—he caught them in the Dihong or Tsanpo River during the Abor Expedition of 1912.

BAITS FOR CHUB

In England one does not as a rule fish for chub with a live fish, but I have caught them occasionally when paternostering for perch with a live minnow, and also when spinning a natural minnow for trout in the Eden, in Cumberland, and elsewhere. Chub should be kept down as much as possible in a trout stream, as he is a greedy eater, and haunts the spawning redds of both trout and salmon. Although some baits are better than others I know no fish which is so catholic in his tastes—any kind of fly, natural or artificial, small or large, any kind of worm, frog, newt, slug, grasshopper, paste, fruit berry, shrimp, prawn, crayfish, beetle, grub, cockchafer, a just hatched small bird which has fallen out of a nest, even mice

and young rats. The most artistic way to fish for chub is with trout fly, rod and tackle. On a hot still summer or autumn day, when you can see the chub sailing about quietly close to the surface near the opposite bank, rising slowly now and then at some fly or other insect, you can do as dear old Walton did, pick out the biggest, and if without scaring him you drop your fly or grasshopper or other bait an inch or two in front of him, he will, as Walton says, infallibly take the bait, whether you cast it from a distance, or, where overhanging boughs make that impossible—dap or dib it on the surface with a short line hanging from the point of your rod pushed out between the boughs—in doing this you must do it as Walton so well expresses it, " with the movement of a snail."

" Move your rod as softly as a snail moves." Anglers who have never troubled to read Walton have no idea of the real art and skill which he employed, though they use his methods, which have been handed down in generations of books on angling. Many a time on a hot sultry day when it was delightful to sit on the bank under the shade of the trees, I have fished for big chub in this way as a boy, and have felt my heart almost stop when the dark shadow which I saw approaching proved to be the finest sight which an angler ever sees—a great trout in the pink of condition, close to the surface, not three yards from your eyes. You can almost count the spots on him, can see his gills lift ever so little as he breathes. Now he has caught sight of your grasshopper or blue bottle just touching the surface, he throws off his lazy easy-going attitude, seems to open his eyes wider, distends his fins, and sails up to the bait, then, as if in doubt, swerves aside, and if you have been cool enough to keep just touching the water with the bait so that it makes tiny rings round it, there is a quick movement of the fish and a great splash as he turns, and pulls the rod top down into the water, as he shoots down among the red hairy looking young roots of the willow—and it is just what the big chub does when he is hooked, but in this case, if you find he is still on after that first rush, you are pretty sure to have him, whereas, with the trout, the battle has but begun—and the angler who can kill a two or three pound trout hooked among trees and bushes where you have hardly space to move your rod is a master of the art, and will owe something to luck also.

In fly fishing for chub on days when the breeze ruffles the surface so that you cannot see the fish, or the light is unfavourable, I have found that the best way is to cast the fly with a little flop close to the opposite bank of a chub hole, and then draw it slowly towards you for a few inches,

then stop for a second and draw again, then, if the chub are on the look out, you will see a little wave come after the fly, stop the fly when the nose of the wave is close to it, count "one," "two," "three," slowly, and strike gently in as straight a pull as you can, low down, sideways; this is much more likely to be effective than lifting the rod straight up over your head. In fishing a dry fly up stream for trout or grayling, I have often missed fish after fish in a good taking rise through lifting the point of the rod straight up, and so lifting the line off the water in the strike, instead of pulling it sideways down through the water. Even when casting a long line up stream to a fish close to your own bank it is, I think, far better *not* to lift the rod straight up and over your head in the strike, but to hold the rod down over the river, horizontally pointing it at a spot about a yard to the left of the fish (if you are on the right bank looking up stream), then draw the slack in through the rings with the left hand, and if he takes your fly as it sails over him, send the point of the rod sideways horizontally down stream, with the rod held low over the water, at least as low as the level of your hand—if wading, it may be within a foot of the surface. From experience I find this not only more likely to hook the fish, but also less likely to scare him than the sudden uplift in the overhead strike.

Some anglers not only lift their rods straight up in striking, but also raise their bodies from the crouching attitude, and probably put the fish down as well as miss to strike it. Chub do not do well in ponds or lakes in this country unless fed by a stream in which they can spawn, although some continental lakes are said to contain fine ones—probably they breed in tributaries.

In fishing for chub where they run a good size, some pounds in weight, it is well to remember that he nearly always—especially if he has seen the angler—makes one good rush, and if the line is not free to run, he will break even strong gut, but his mouth is very leathery, and even a small trout fly gets a good hold, and, with ordinary care, he will not get away, as he does not fight with his brains and try to break your line in weeds and roots, and by sudden desperate jumps, like the plucky trout—I have had Test grayling jump and fight as well and long as any trout, and Itchen grayling also.

In float fishing for chub I like a fly rod and Nottingham reel and fine undressed silk plaited line, with a good goose quill float, a fine gut line (not drawn gut, a mayfly tapered gut cast answers admirably), and a small

hook—say a crystal roach hook; on this tackle chub, in a strong stream, if over two pounds, will give you capital sport.

Some of the best chub fishing I have had was with this tackle, fishing in the River Stour, near its junction with the Avon, at Christchurch, when my friend, that keen angler, the late Mr Henry Newlyn, had the water. I used plain paste, made as follows: Some of the inside of a new "Household" loaf of white bread put into a clean cloth, dipped in water, then the cloth gathered round the wet bread and screwed round till the moisture is pressed out, then the lump in the cloth is well kneaded and thumped with the right hand while held tightly screwed up in the cloth in the left—then the cloth is opened and the lump of stiff bread paste is broken in two—if the inside shows it is still dry and crumbly, a little water is sprinkled on it and the kneading process resumed until you have a nice even paste, not pappy, to this a little honey or castor sugar can be added. The inside of a half quartern loaf made into paste in this way will be enough for some hours' fishing both for hook bait and ground bait. It soon goes sour in hot weather, and it is therefore better to make it fresh each day. On arriving at the chub hole or swim, throw in carefully a dozen pieces, each the size of a walnut, at the top of the water you are to fish, so that the stream will carry them down to about where you expect to get the fish.

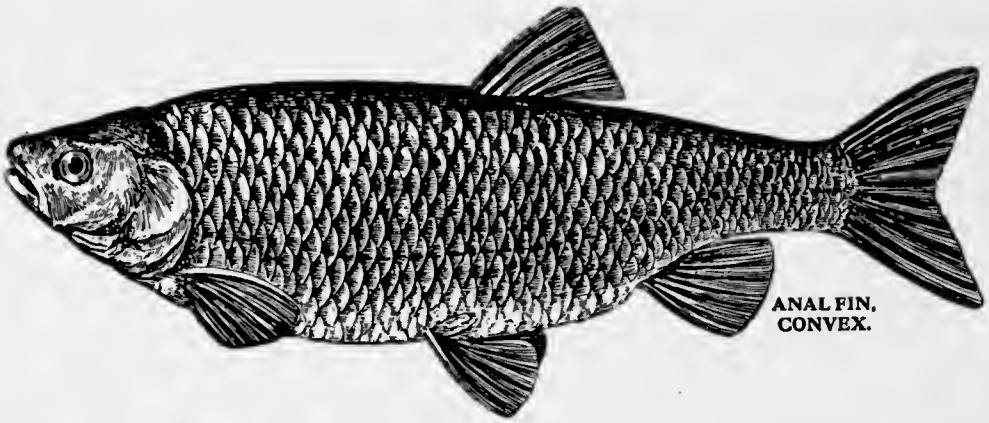
On August 12, 1903, I caught on the above described rod, tackle and paste in the Stour, near Tuckton Bridge, a fine chub that weighed just six pounds when weighed at Christchurch Station some hours later, and has been grandly set up by Messrs John Cooper and Sons, of Radnor Street, St Luke's, E.C. Painted casts of fish are all right, but I do not think they are half so interesting as the actual fish itself, with all its important exterior parts.

Some years ago my friend, Mr W. C. F. Gillam, for many years hon. sec. of the Sussex Piscatorial Society, and a first-rate angler, wrote to me that he had tried every paste and other bait he could think of, in vain attempts to lure some four or five big chub in the Sussex Ouse, near Barcombe Mills.

I told him to get some medium-size boiled prawns, to let them have a few for a day or two now and then, and then to try floating one down to them. A few days later I got a post card to say that he had caught the lot. Another very good bait is the tail of a boiled crayfish, or an uncooked tail, or a small live crayfish whole—of course such baits are better in waters

where crayfish are found—as chub are particularly partial to them, especially when the poor crayfish has just cast one coat, and not had time to harden his new one. Although not often taken over five pounds, the Thames chub are fairly numerous—a very deadly bait for a Thames, or any other chub, is a small frog an inch or an inch and a half long; kill it by a flip from the forefinger, held by the thumb and let go suddenly so as to hit the frog at the back of the head. To a No. 4 round bend hook on gut nip a split shot on the gut half an inch from the end of the shank, put the point of the hook in at the vent and bring it out through the head, then with a bit of yellow floss silk or worsted bind the hind legs of the frog together crossways above the shot. Baited in this way it goes down stream head first on float tackle, and can also be cast from a boat or canoe so as to fall

CHUB (*Cyprinus Cephalus*)



Chub grow to large sizes in the Hampshire Avon and Stour, in the Thames, Kennett, Colne, Loddon, Lea, Trent, and many other rivers.

near the bank and under the boughs in the chub hole or swim. This method of baiting is given by Dr Karl Heintz, who also has an excellent way of baiting with a cockchafer, or other beetle; he threads the gut with a fine baiting needle right through the insect, and finds in this way that the bait often gets pushed up the gut by the fish, and can be used to capture two or three fish. A big red or black Palmer fly with a bunch of gentles on the hook is a very deadly bait to cast among a company of chub looking out for insects dropping from the trees on a hot day.

But the winter is the time when the chub fights best, the colder it is the better he likes it. Stout pipe macaroni, stewed so it is soft, but not too soft, is a very good bait and ground bait, and can be baited by having a small

spring swivel a foot from the hook, so the hook length of gut can be removed; the loop of the latter and the gut is then pushed carefully through an inch or so of the pipe of macaroni and the gut looped on to the swivel spring catch. A small triangle is generally used just big enough to prevent the macaroni slipping over it, but I dislike triangles, as they are so unfair to a fish which breaks away, and probably dies of starvation because the triangle locks his mouth or throat—a larger single hook is much more humane and quite as effective. Cheese paste, bread paste, and paste made from dough or flour and water with a little cotton wool worked into it, are all good baits at times for chub—but do not be afraid to use a good lump, as big as a cob nut or even a walnut if the chub run large.

It is very pretty work to let a float travel away down under the boughs or along a clay bank worn away under water, and then hit a good chub twenty or thirty yards away. Of course get him out into the stream away from the swim you have baited as soon as possible, so as not to scare the other fish.

THE BREAM

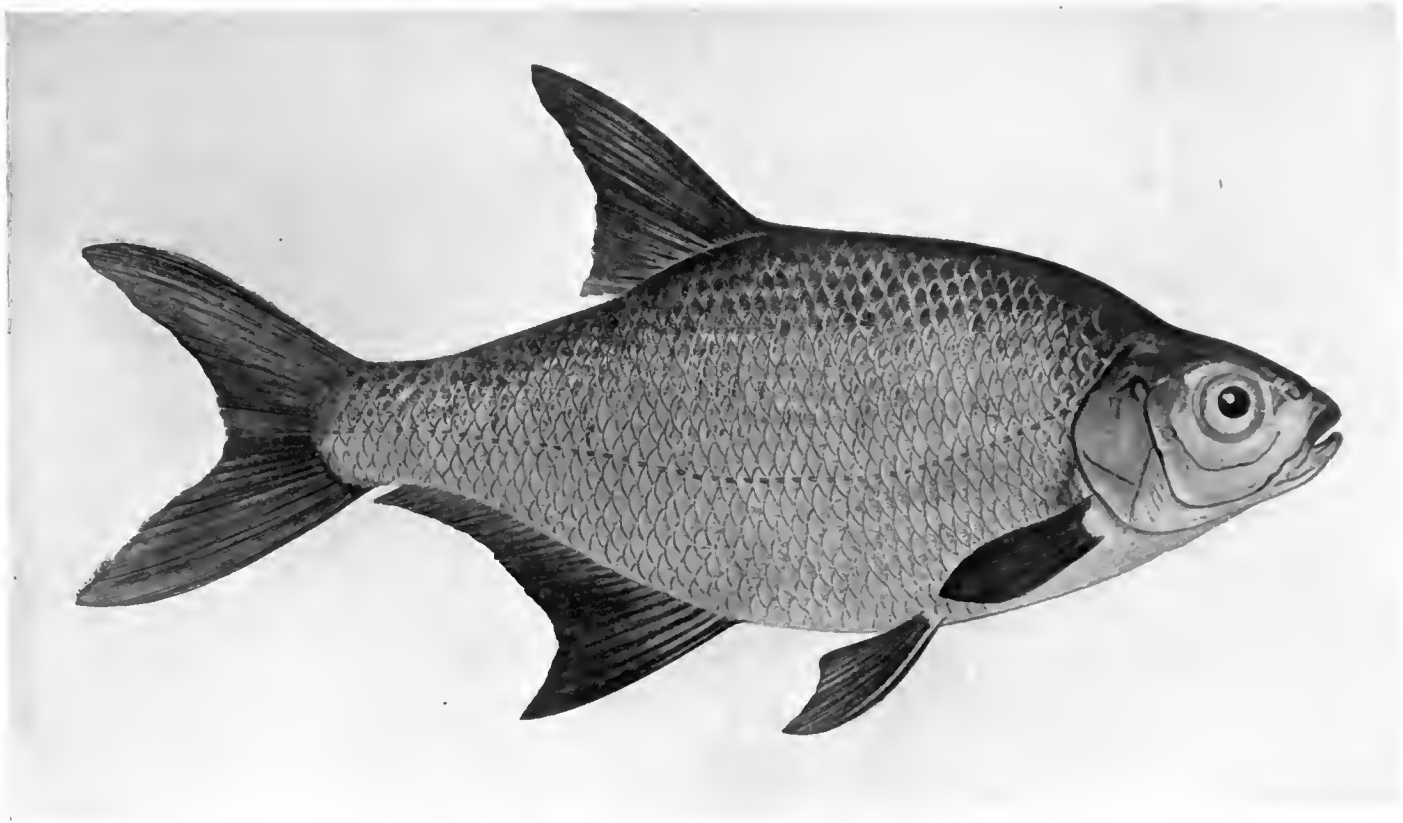
ABRAMIS BRAMA

German, *Der Brachsen;* French, *Brême*

By R. B. MARSTON

IN the United Kingdom the bream would seem to be one of the oldest of our native fish, being found in several Irish rivers and lakes, as well as in the broads and rivers of East Anglia, and in many other English rivers and lakes, especially in the Fen District and in the Midlands. It loves quiet deep water, and is a curious, interesting and handsome fish. When it is a good season the bream is a fine olive brown on the back, with sides silvery grey, and grey fins. I have often watched them on a warm summer day swimming about, in great shoals near the surface, when a bird passing overhead, or a sudden noise, would cause them all to sink suddenly—by noise I mean a sudden bang, for mere loud shouting seems to have no effect, it must be something which imparts a stronger vibration to the sound waves. In Sweden it used to be the custom not to ring the bells in the bream spawning time, to avoid disturbing the fish. In Russia a kind of light yellow caviare is made from the small yellowish bream eggs, of which enormous quantities are deposited in May and June, on water plants and on the ground.

The biggest bream I have any note of is that mentioned by Frank Buckland, to which his and my attention was called by our old friend, the late Dr Norman, of Yarmouth. It was eleven and three quarter pounds in weight, measured two feet two inches in length from nose to fork of tail, and over ten inches in depth. It was set up by Mr T. E. Gunn, taxidermist, Norwich, who mentioned a very interesting fact, viz.: that the age of this monster was known—as a gentleman who stocked the pond, a small one of half an acre, at Beeston Regis, near King's Lynn, in which it was caught, said it was put in by him when very small about fifty years previously. I should like to see scales from fish that size, especially from that particular fish, which I saw at the great International Fisheries Exhibition of 1883. Mr C. T. Regan says that there is a record of a bream of seventeen pounds from the Trent—but I do not think he considers it as well established—neither do I. In East Anglia the bream and roach angler is often bothered by the small "white bream" or "bream flat" which



BREAM.

abounds in all the rivers and broads—it is described by English, French and German ichthyologists as a district species, not growing to more than a pound or so, but fish breeders who have reared these bream flats in their ponds tell me that they grow into stately fish of over five pounds' weight, in outward appearance just like the true bream; still the differences in the throat teeth, which in the bream are described as being in a single series, those in the bream flat as in two series, are, I admit, not to be easily swallowed. Buckland mentions that Dr Norman, who was keenly interested in fish and fishing, informed him that great quantities of small bream are used as bait for crab and lobster pots.

In angling for bream the baits, tackle, etc., mentioned in the notes on roach, are used—personally I find a light twelve-foot roach rod, or an old fly rod with a fine gut fly cast and small roach hook increase one's sport—the ground bait given for roach fishing answers just as well for bream, and when the fish run from three pounds to over five pounds, they require careful handling of the rod with light tackle, especially in a river, as they have a way of rolling over suddenly, when their weight may break fine drawn gut. Marsh worms, garden worms—called lob worms when large—are favourite baits for bream, and I have caught a great many on brown bread paste.

THE BARBEL

BARBUS VULGARIS

German, *Die Barbe;* French, *Le Barbeau*

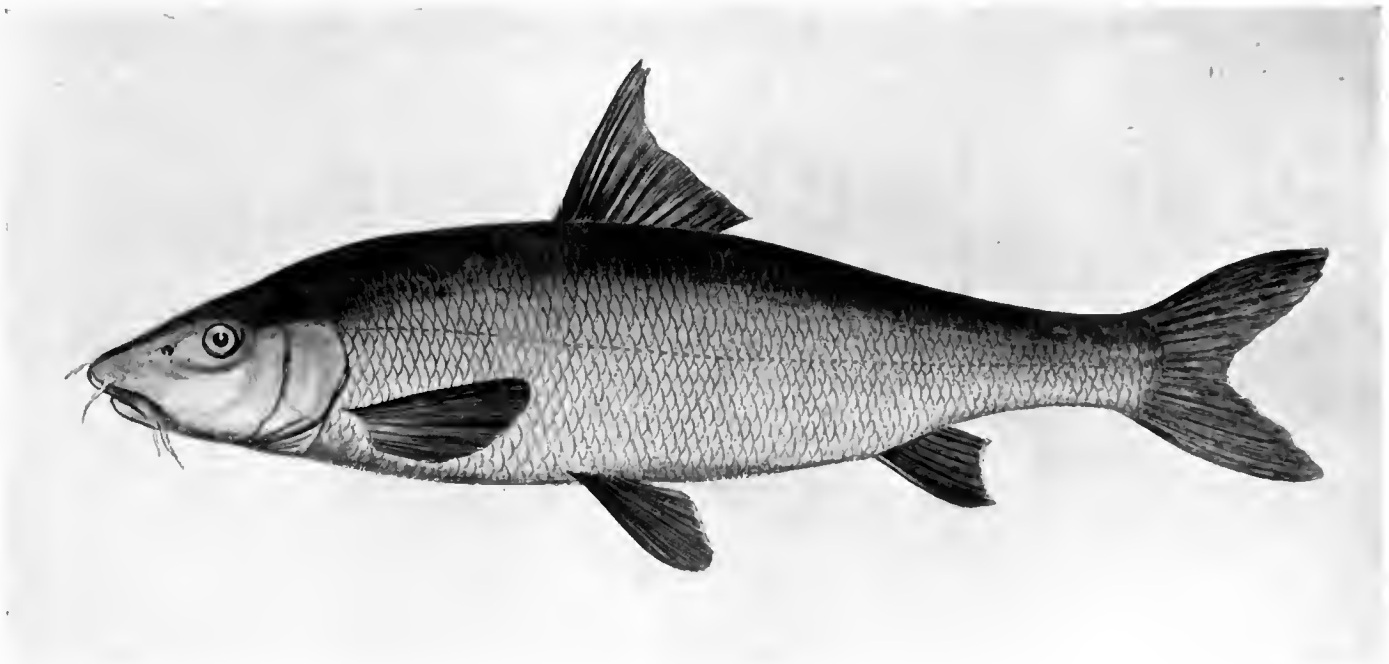
By R. B. MARSTON

I KNOW no river fish which is so capricious in its feeding—at any rate on the angler's bait—as the barbel, and it is a good thing, for otherwise this fine fighter would have become extinct long ago. When they do "come on" in a good barbel swim in the Thames or Trent there are scores of big and little fish, say from two to ten pounds, spread over the bottom of the swim and racing with each other in competition for your worm or bit of "scratchings."

Up to fifteen or twenty years ago it was not an uncommon thing for Thames anglers who had baited a barbel swim with lob worms to take between one and two hundredweight of barbel, including fish up to ten pounds or so, and occasionally much heavier—up to about twenty pounds have been recorded in this country; but neither in Thames nor Trent or Lea are there now so many barbel as formerly.

This fish gets its name from the four beards or barbules, of which two hang down from near the pointed end of the upper lip and two near the angle of the mouth.

The barbel lives in the strongest streams, and loves a clean, gravelly bottom, and although, as I have said before, there are times when he feeds madly, there are often months, and sometimes whole seasons, when no bait will tempt him; this is especially the case in the Kennet, lower Colne, near Wraysbury, and the River Lea—all Thames tributaries. An old angling friend, Mr Tom Hoole—dead long ago, like so many of my old angling friends—used to invite me down to Wraysbury to show him how to catch the big barbel in the pool near Wraysbury Station, where he was station master; he told me he had tried them day and night, often in every kind of way, but could never get them really on, but I knew if Tommy Hoole could not succeed with them I had no chance—for he was a past-master at Thames angling, and in the Thames itself had many a heavy take of barbel. Then, on the Kennet and Lea, any angler who knows those rivers well will tell you of the droves of great barbel which are often seen in the weir pools, but rarely caught.



BARBEL.

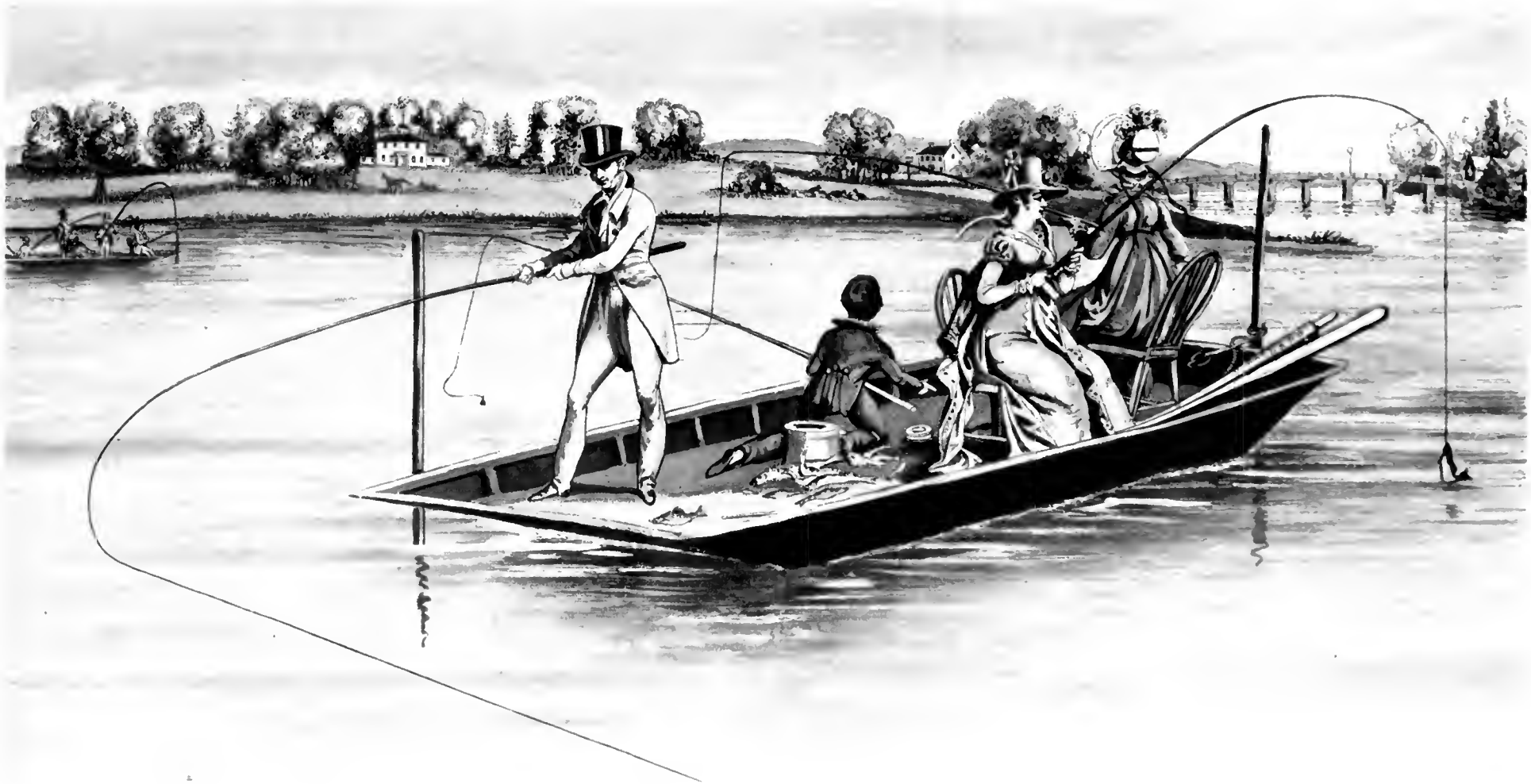
THE BARBEL

From Walton to the present day angling writers who refer to barbel nearly all mention that a hooked barbel not only fights with vigour, but also tries to cut your line with his back fin or by striking at it with his tail. The first ray of the back fin is notched, and doubtless many a gut line has been cut by being drawn across it in the turnings and twistings of the fish, but that he deliberately attempts to use fin or tail in the way described is, I think, open to doubt. For a barbel the best bait is undoubtedly a worm, fished on a single round bend hook an inch long in the shank and three-eighths of an inch across from point to shank, and it is a good plan to have a bit of bristle whipped to the end of the shank, it not only helps to hold the worm up on the hook, but also helps to get the point engaged in the thick lip of the fish, when he attempts to strip the worm off, as he often does; in fact, when barbel fishing—ledgering from a punt in the Thames at a weir or in some "deep"—I have often been astounded at the way a barbel will give a sudden tug at your line and strip the worm right off with impunity, even when the medium sized lob is threaded on the hook from end to end. Although I have never done so, I have sometimes thought of putting a bit of strong elastic cord between two loops on the gut—so that the fish would have to stretch the elastic in his sudden pull. An old friend, the late Dr John Brunton, told me thirty years ago that he had often tried this dodge with success when grayling fishing with the fly on the Itchen. With a fine silk reel line and a yard of fine round stained gut, a ledger bullet of half inch diameter or rather less—unless the stream is very strong—hammered so as to have two flat sides, is all you need to enable you to pitch out the bait, and anchor it in the spot you wish to fish. As usually made, this bullet is threaded on to a bit of stouter gut some six inches long with a shot at each end with loops for attaching it to the gut line and the fourteen or sixteen inches of gut attached to the hook. The idea is that, having cast out, you wind in line until taut, when the bullet will rest against the lower of the two shot, thus allowing the barbel a free pull through the bullet. When sea angling at Scarborough last summer I was fishing for billet or coal fish near a well-known local angler, Mr Sadler, who caught more fish than any of us; he appeared to be using a long, flat, coffin-shape ledger lead. I presumed that the line was free to run through it as in our ordinary Thames ledger and asked him if that was the case. He then showed me his tackle, and said he had long ago given up using the running lead—i.e., one which you can move up and down on the line—as he found that the fixed lead was

far better. The billet is a fish which comes at your bait with a quick bold tug like a barbel, and the weight of the lead helps materially to fix the hook in his mouth. I intend to try his plan next time I fish with a ledger for barbel, and to use a slightly heavier bullet than usual. Before fishing a barbel swim it is usual to get a reliable professional fisherman to bait it well for you with lobs which you have sent him from Messrs W. Wells and Co., of Sussex Street, Nottingham, who have customers for lobs and other worms in all parts of the country. Mr A. E. Hobbs, the very popular hon. sec. of the Henley-on-Thames Angling Association, one of the best all-round anglers living, says that he prefers to bait his barbel swims two, or even three, mornings before he fishes, using 1,500 whole worms, not cut up, as is the usual way, and retaining 500 to fish with and ground-bait with occasionally. He sinks his worms in hollow clay balls, or in soft brown paper bags with a large stone inside at each corner, a bit of which corner is torn off, the mouth of the bag is then screwed up slightly and the bags dropped in so that they will go down and rest where you wish the worms to work out. I should have imagined that the action of the stream would hardly be sufficient to break up the paper and release the worms, but Mr Hobbs is too practical an angler not to have satisfied himself on that point.

Another bait and ground-bait for barbel is greaves, the refuse material in tallow making or melting, to be got in cakes at the tallow chandlers.

Some anglers boil or scald the greaves, or " scratchings " as they are also called, but Mr Hobbs says this unpleasant process is unnecessary—if the cakes are broken up and thoroughly soaked before use, picking out the best pieces for the hook bait and using the rest to ground bait with. I would always use a dead bait, or a paste of some kind, or stuff like greaves sooner than live bait, if the result was likely to be successful. But there is no doubt that, although barbel will take greaves greedily at times, the ground baiting must not be overdone, or they will be sickened and put quite off the feed. Moses Browne, writing of Thames barbel fishing about 160 years ago, says that " Graves, which are the sediment of tallow melted for the making of candles cut into pieces, are an excellent ground bait for barbel, gudgeon, and many other fish, if thrown in the night before you fish." Walton says sheeps' tallow and soft cheese beaten or worked into a paste is a " choicely good " bait for barbel in August; he also recommends toasted cheese—and I believe the record Thames barbel was taken on a bit of fried bacon, and, when you come to think of it,



THAMES PUNT FISHING 100 YEARS AGO.
(From an old engraving.)

fried bacon and toasted cheese are tasty morsels and pleasanter to use than worms, greaves or green gentles—as a good bait for barbel, especially when float fishing in the Nottingham style, i.e., letting out line gently as your float travels down stream, holding it back a little so that the bait trips along close to the bottom. It is an interesting style of fishing, as after each swim down you wind in the line and let the float travel down again for perhaps twenty or forty yards or more. In this long distance float fishing it is usual to have the sliding float, i.e., a fixed wire eye at the bottom standing out at right angles, and another on the porcupine end above the long cork body of the float an inch from the top—through these projecting rings the line passes, and, as already explained, by fixing a little bit of an elastic band on the line above the float at the depth you wish to fish you get a better strike, and can fish deeper than you could with a fixed float. A bit of elastic will pass through your rod rings if necessary, whereas the stiff bit of match recommended by some angling writers would stop at the end ring—unless as big as that on a sea rod, and thus one of the advantages of the slider flat is neutralized.

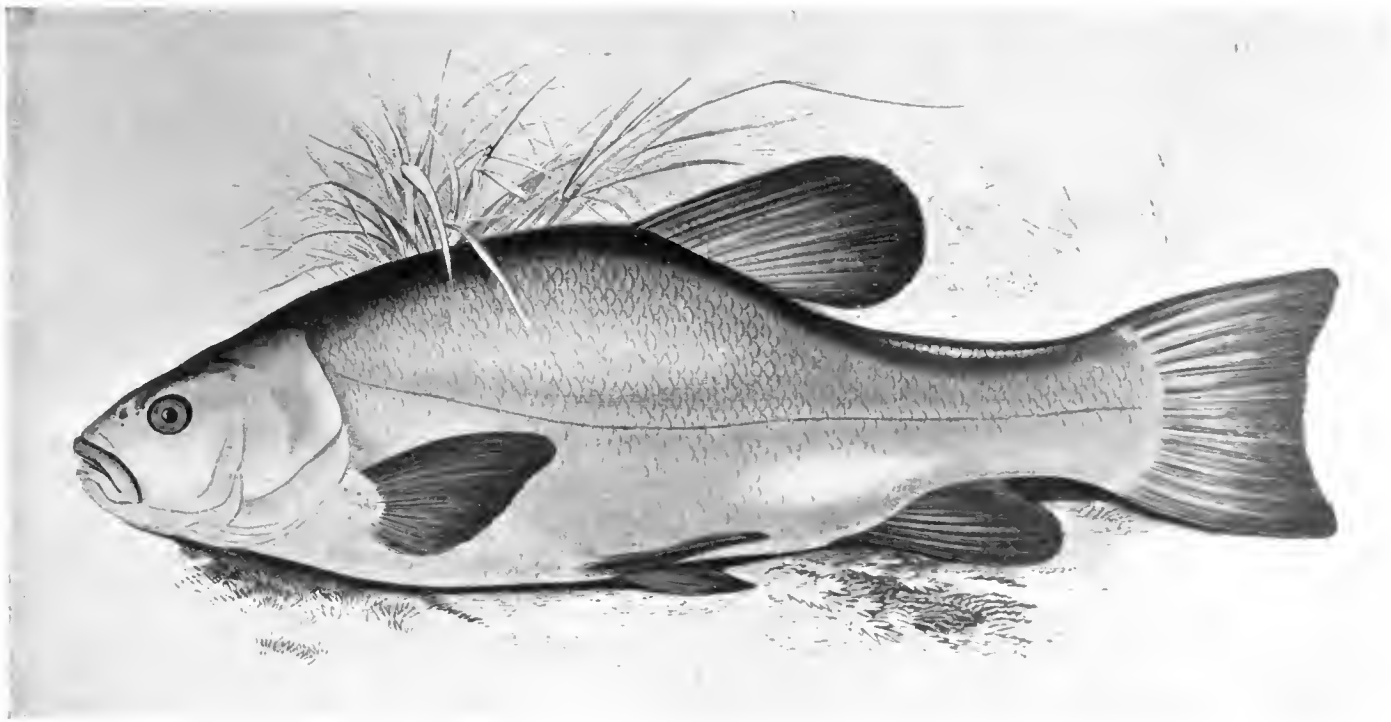
THE TENCH & TENCH FISHING

TINCA VULGARIS

German, *Die Schleihe;* French, *Tanche*

By R. B. MARSTON

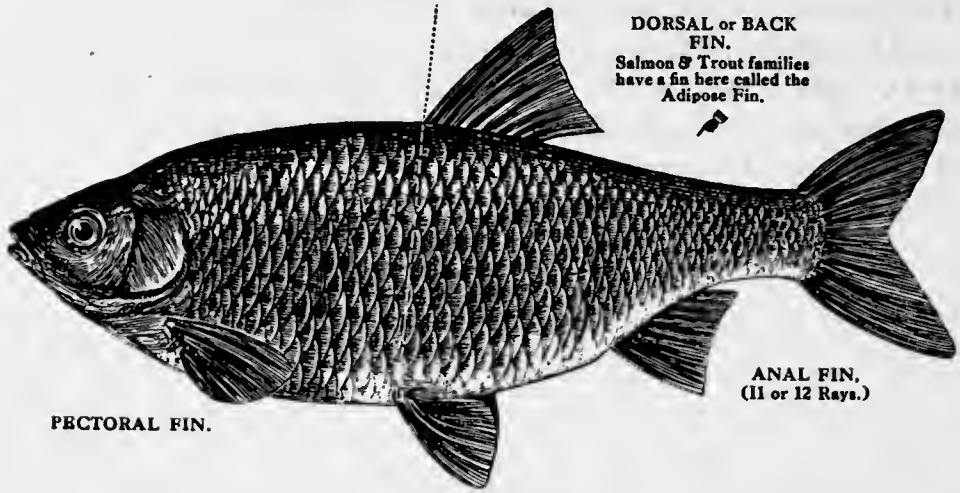
I HAVE often thought, when landing a tench in good condition, in September or October, that in appearance it is more like the trout than any of the other "coarse fish"—and I have occasionally caught trout with very faint and few spots, which have reminded me of tench. The small scales of the tench have much to do with this resemblance, and by using, as I always do, an old fly rod, I find that tench of two pounds or over give very good sport, and are handsome, interesting fish—his tail is also like a trout's. At the spawning season—which may be as early as May, and as late as July, according to the season—the male fish have numerous little whitish or pearly beads on head or back; from 200,000 to 300,000 small yellowish eggs are deposited on water plants. The tench hibernates in the mud, and Max von dem Borne mentions that even in the summer they are said by some trustworthy observers at times to hide away for long periods in the weeds and mud in a sleepy state. This would account for the fact that in some seasons very few tench can be caught even in waters famous for them. As regards tackle, baits and ground baits for tench, those described for carp and bream answer admirably. A red worm on the bottom hook—or a lob worm if the tench run large—and a bit of brown bread paste on the other hook above it a few inches off the bottom—on which the worm should be—I have never found anything better to attract tench with. As before explained, I do not much believe in scented baits, but I do believe that a drop or two of spirit of tar mixed with the ground bait, and the latter thrown in some hours before you fish, does attract tench. My old angling friend, the late Mr Alfred Mackrill, loved tench fishing, and caught grand fish up to eight pounds in Tring Reservoirs, where I have had delightful days' pike, roach, and tench fishing with him. He was strongly convinced from experience that whether in punt fishing or bank fishing you could not be too quiet, if you were after big tench; also that you should never hold the rod in your hand, but fish with it resting on the side of the punt, on the well, with a little line pulled off the reel, and when you had a bite, to let the fish draw that bit of slack



TENCH.

line out before grasping the butt and tightening on the fish. In the Thames at Henley, Mr A. E. Hobbs had some grand tench last season (1912). August to October are the best months for tench fishing—I have occasionally, in mild winters, caught them right up to Christmas—and bream also. Mr C. Tate Regan says, and I have often noticed it, that at the spawning seasons the male fish may be distinguished by the greatly enlarged outer ray of the pelvic fin.

ROACH (*Cyprinus Rutilus*).

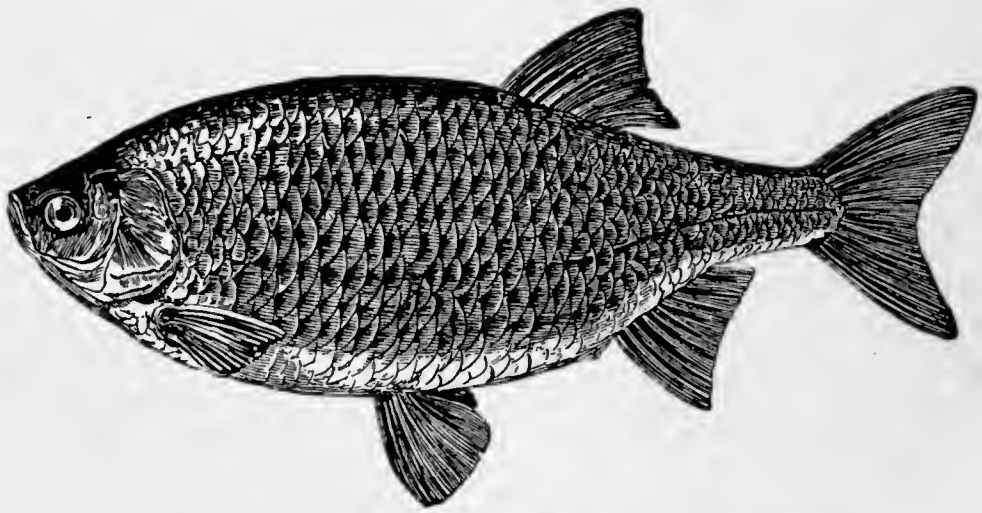

DORSAL or BACK FIN.
Salmon & Trout families have a fin here called the Adipose Fin.
CAUDAL FIN or TAIL.
ANAL FIN. (11 or 12 Rays.)
PECTORAL FIN.
VENTRAL FIN.

The Roach is a handsome fish. Yarrell says:—"It has many more colours than the rainbow, dusky green on the back, with blue reflections becoming lighter on its sides, passing into silvery white on the belly, the irides yellow, gill-covers silvery white, tail and dorsal fin tinged with red, pectoral fins, ventral and anal fins bright red." Where a so-called specimen Roach is produced which exceeds 2 lb. 12 oz., it is almost certain to be a Rudd or Hybrid.

In the Roach the back fin is nearly or quite over the belly fins.

[NOTE.—Mr R. B. Marston, Editor of the *Fishing Gazette*, considers that the largest true Roach caught in England by fair angling, was one of 2 lb. 13½ oz., caught by Mr George Edmonds, of Walton-on-Thames, and preserved November 18, 1904, by Lewis Hutton, Naturalist, Bristol. Its length was 18 in., girth 14 in.]

RUDD.



In the Rudd the back fin is set much farther back than in the Roach.

THE ROACH & RUDD

LEUCISCUS RUTILUS. LEUCISCUS ERYTHROPTHALMUS

French, *Gardon. Rotengle.* German, *Die Plötze. Das Rothauge*

By R. B. MARSTON

THE roach and rudd are so much alike that even experienced anglers often confuse one with the other—there are no roach in Ireland but great numbers of rudd, also of bream—but in Ireland rudd are often called roach. The illustrations and notes under them show the chief outward differences of the two species; the throat teeth also differ—according to some ichthyologists the roach has smooth teeth and one more than the rudd, the teeth of the latter being notched like a saw. According to German ichthyologists, natural hybrids are common between roach and rudd, roach and bream, rudd and bream and between others of the carp family. Certainly I have often had very fine fish sent to me for identification which were evidently hybrids—especially crosses between roach or rudd and bream. In Mr C. Tate Regan's admirable work, "British Freshwater Fishes," will be found some interesting notes on hybrids of this fish.

Roach and rudd spawn in April and May on water plants, depositing on an average about 100,000 small adhesive eggs which hatch out in a few days in warm weather. In some foreign trout hatcheries coarse fish are bred in small ponds in order to feed the young trout on the minute fry—there is no harm in this where trout are bred for the market, but I am not so sure that it does not teach them to become cannibals, and little inclined to feed on flies.

In all rivers, canals and ponds near large towns in England, France and Belgium where roach are found, there also will be found thousands of the keenest of anglers, men who prefer roach fishing to any other kind of fishing; they may now and then have a try for barbel, pike, perch, etc., but once bitten with the real love of roach fishing, as felt by thousands of anglers who live in big towns, and no other fishing is like it. One bitter, raw, foggy and freezing day of this January of 1913, I was returning to town after pike fishing, when I met a member of one of the angling clubs I belong to—one nearly one hundred years old now—the club I mean. He told me he had fished the club water on the Colne all day and only caught

one little roach—and that, too, in "swims," where it was nothing uncommon for him to take, with his long roach pole and tight line, ten pounds to twenty pounds of fine roach. He is a trout angler and pike angler, and yet he told me that there was nothing he enjoyed more than fishing a good roach river, with his eighteen or twenty-foot roach rod or "pole" as it is often called, and a tight line, i.e., with the line tied to the rod and without a reel and running line. For many years I had a beautiful roach pole of East India cane about eighteen feet long and I used it in roach fishing, occasionally, with a drawn gut three yard fly cast as line, a small porcupine float, a "crystal" roach hook and one or two small shot, just enough to sink the float so that only half an inch of the white top stuck up out of the water as the float was carried along the "swim" by the stream. A "swim" is any part of a river or canal, or even a still water, where roach are fished for—in the same way anglers speak of barbel swims—it means, I take it, any place where one uses a float on the surface to hold up the bait as the stream carries it along or floats it. In Yorkshire a favourite and deadly style of winter fishing is called "swimming the worm" or maggot, and is very killing for grayling and chub—it is merely float fishing, with a tiny float, and is practically the same as the fascinating Sheffield style of angling, which will be described presently.

The long roach pole, so beloved of the old school of River Lea roach anglers, enables one to drop the baited line well out and up stream, and to allow it to swim down for some yards opposite to the angler seated on his seat basket, and as the little white tip of the float with its red cap moves quietly down the "swim," the rod point is held out horizontally over the float and moved almost imperceptibly in that position, until the end of the swim is reached, when the line is lifted out and gently lifted over the water and dropped in again. This action is repeated until the watchful eye of the expert notices that the dip of the float indicates a bite, and I believe one of the fascinations of roach fishing, especially in hard fished waters, is the extremely delicate way in which a knowing old roach will bite; perhaps there is a space of an eighth of an inch or so between the red cap on the projecting, upright bit of white pointed quill and the surface of the water. I have often struck on noticing that the red cap had sunk an eighth of an inch, and firmly hooked a good roach, and it is often the best fish which hardly move the float. I am referring chiefly, on this point, to roach fishing near London, where the fish have been fished for centuries;

but even in big rivers, like the Kennet and the Hampshire Avon and Stour, famous for the best and biggest roach and chub, the roach at times will bite in this curiously delicate way—although, as a rule, the inch of float goes nearly, or quite, under.

In using the tight line (no reel) and long roach rod, of course it is necessary to take off the butt joint when you have hooked and played your fish, otherwise with an eighteen or twenty foot rod and a line of only half the length, you would find it awkward to bring the fish to the landing net. With the line fastened to the rod, and no reel, if you hook some big barbel or chub, as is often the case, the chances are if he makes a long rush that your fine drawn gut or single hair will be smashed, so I prefer always to use a reel. But your genuine old-style roach-pole purist disdains a reel, and would rather take his chance of being broken occasionally than use one. In using a reel with the long rod it is easy to have it with a silent check, and then, with half an inch of match tied in your line at any point you wish, you can wind up until the bit of match is tight against the top ring, and so fish with the tight line, which, by many, is considered such an advantage in quick striking in this style of fishing. The strike must be done while the float is depressed, showing that the bait is held in the fish's mouth, it must be done instantly, but gently, by depressing the butt under your arm as you tip up the point of the rod for a foot or so—it is the upward move of the springy top joint which tightens the line held by the fish and hooks it.

Another interesting, and often killing, way of using the long rod is to plumb the depth, then fix the float a foot higher up the line—for instance, if the water is four feet deep, you have five feet of line between float and hook—squeeze a bit of your ground bait, the size of a walnut, round the shot, swing this out carefully so it rests on the bottom a little below the point opposite you, hold the rod so the float is, as it were, leaning against the stream with the point of the float out of the water pointing towards the end of the rod. The ground-bait, if properly made, will flake off gradually, and the fish will follow the bits upstream, and so find your hook bait resting a foot or ten inches below the shot on the bottom. I have often had good sport in this way, and also by burying the hook bait, gentle, or bit of paste, etc., in a small lump of ground-bait, and holding it in this way—only, in this case, you must not be in a hurry to strike at the first movements of the float, but wait until there is a decided double knock.

GROUND-BAIT AND BAITS

I could fill a long chapter with receipts for ground-baits and baits for roach, rudd, etc., but it is unnecessary—they are practically all useless when the fish are not feeding, and when they are feeding there are none better than those I shall mention, with which I have had good sport in waters containing roach and rudd in all parts of the country. Take a pint measure of pollard (coarse meal used for feeding fowls, etc.), one pound of boiled potatoes, one pint of bran and the crumb of half of a half-quartern stale loaf of bread, soak the bread by dipping it, in a cloth, in warm water, then squeezing out the water by twisting the cloth, as described in making paste for chub. Mix all the ingredients in a large basin or clean zinc pail, then add water as you stir them round, and so gradually work all up into a sort of stiff pudding. If you find you have put in too much water add some more bran. When you have got it into a nice even consistency, not too dry and not too wet, make it up into balls the size of an orange. A clean zinc pail with some bran in the bottom is a good way to carry it when fishing from a punt or boat. A strong brown paper bag is as good as anything for carrying your ground-bait in your fishing bag or creel. It is worse than useless to use old ground-bait which has gone sour, as it drives the fish away instead of attracting them.

In making up ground-bait the point to remember is that the quieter the water you are to fish the less need there is for the ground-bait to be stiff and heavy—you want something which will sink and then soon get soft in the water and break up. In a strongish stream, such as one often fishes in the Thames or Hampshire Avon or Stour, of course a stiffer, heavier ground-bait is necessary.

This ground-bait—sometimes putting a few bits of the paste you are to use for hook bait, or a few gentles, or small redworms into a ball before you throw it in—I have found as good as any for all kinds of fish. I do not think it is necessary or advisable to add scents or flavourings, almost the only exception I would make is that when tench fishing and using this ground-bait—I buy three pennyworth of spirit of tar—it is like water with a strong tar smell, and should be kept off one's fingers. I put about one drop on each ball of ground-bait, and, from experience, I think it helps to attract the tench, which are often hidden away in the weeds, and would perhaps not notice the plain ground-bait at all. I got

the idea through finding that whenever I had my punt bottom tarred, the tench seemed to be attracted, hung about under it, and readily took a worm or a bit of brown bread paste dropped in by the side of it.

BAITS FOR ROACH AND RUDD

If I were restricted to one bait for roach all the season I think I should select paste made from flour and water, or the crumb of a white or brown loaf, or arrowroot biscuits. In writing about the chub I have described how I make up the paste for the hook bait—in roach fishing I often, in deep swims, use two hooks, one with white paste almost touching the bottom, and one, two or three inches higher up, with paste made red by working a little vermilion or other red colouring into it. Red paste is a favourite bait with roach anglers in East Anglia. Roach have very sharp, bright eyes, and the red colour may attract them. When I have been dry-fly fishing for trout in some water I have, which contains fine roach and dace, I have often seen a roach come sailing up to take my floating fly, and had to be sharp to get it away before he got to it. As regards the size of the paste bait it depends on the water, if clear and not very deep the smaller the bait the better; in a deep, fairly strong stream paste made with flour and water, with a little cotton wool pulled out into filmy bits and worked into the paste, sticks on well. I always like just to feel the point of the hook sticking out through the little ball of paste—in size, like a medium holly berry.

The crumb of a new old-fashioned household loaf has a pleasant aroma, and although it makes very stiff paste, by dipping the cloth containing it in water now and then, one can always get some just right for sticking on and not so stiff as to prevent hooking in striking.

MR MALTBY'S GROUND-BAIT

For very quiet water Mr Maltby recommends the following ground-bait:

> "Ground bait is to be used only as a means to an end and, if used with discretion, will attract the fish around you, so that your hook-bait may have a fair chance—if behind the rod we have an angler with brains. Now, the ground-bait, after many years of experimenting, has resolved itself into simple bread, prepared in such a way that makes it very attractive to fish life. 'Dust' is often the term used, and dust it is—bread dust, made by baking bread in the oven (not

burned) until hard and dry, then grinding in a coffee mill to powder. To prepare it ready for use, take the quantity you may require, put it into a clean bowl, add just a little water to make it damp—mind you, as little as possible—then rub it with the hands until it works smooth, no lumps, so that it does not stick to the hands or fall to pieces when you throw it in, and of such consistency that as soon as it strikes the water it falls to pieces like dust, and spreads around. To get this ground-bait just the right consistency requires practice. If wanted for running water, add more water and press into a hard lump; it will then break away with the action of the water after reaching the bottom. The great advantage of this bait is it is too fine for the fish to get a great deal at a time, so your hook-bait has a good chance. It will also keep good for any length of time if kept dry, and, being in a concentrated form, a large quantity goes into a small space. Many take two bags, one for the dry stuff, and, after getting to the river, put a small quantity into the other bag and damp it at the riverside. With practice this can be done nearly as well. This is the ground-bait usually used for match fishing. For pleasure fishing I do not think there is anything to beat scalding some bran with *boiling* water, then cover down until the bran has swelled to its utmost capacity. Then add the dust until the proper consistency required. Of course, many of our anglers add other condiments to the above, as they fancy; but, as I have said before, after years of experimenting, 'Don't' is my advice; for if you cannot catch fish after using this bait properly prepared, the fish are not there, or absolutely off the feed.

"I have been told that our idea in using ground-bait is to throw more in the water than the next man to you. It all depends upon how the fish are feeding and the condition of the water. A general rule is, if a good colour and the fish well on the feed, keep dropping a bit in about the size of a walnut, and as soon as the fish *appear* to slacken off biting, stop for a time; if fine water, great care is necessary to prevent overfeeding or frightening the fish."

A killing bait for roach is bread crust; take the bottom crust of a loaf and cut it into small cubes; by slightly moistening the crust you can easily put the hook through it.

The modern very white, starchy, odourless bread is not nearly so good as that made from the old farmhouse stone-ground flour, which kept moist and sweet for days; it is not nearly so good for bait or for making

good teeth and bones for mortals. If the new " Standard " bread contains the same goodness of the wheat as the old English farmhouse bread made from English red wheat, ground on the trout stream mill, then I should say use that for paste for roach, and chub, and bream, and tench, and for children.

Grains of wheat and pearl barley, stewed gently until they are swollen and just bursting, are often used for roach as hook-baits; in Norfolk even maize, Indian corn, is steeped in water until soft, and found a good bait at certain times.

Of worms I have found two or three blood-worms—the larvæ of the gnat—tied together with a strand of red worsted, a capital bait for roach in deep clear swims, but the bother of baiting is too much. A small lively red-worm is taken at times, and the tail of a freshly-dug lob-worm or big garden worm is often a deadly bait in a river after a flood, when the water is clearing a little and gradually falling. Then float ledgering is very interesting, i.e., having a goose-quill float on your line and fishing right on the bottom in quiet bays and corners out of the rush of the current. Almost any river fish, in fact, every one big enough to get it into its mouth, likes the tail of a lob, and in fishing for roach under such conditions I have even caught small pike.

As regards the natural baits, one can find in almost any river by pulling out a big lump of water weeds—shrimps, snails, creepers, caddis (i.e., the larvæ of sedges and other water flies in their curious cases of sticks and stones and empty snail shells, etc.)—all these small deer are what the roach and other fish hunt for among the weeds, and they are all killing baits at times. In fishing with gentles, which are the larvæ of the blue-bottle fly, it is a custom of some anglers to colour them with some of the innocent colourings used by confectioners; but if a nice plump, naturally yellow gentle, with a bright red crysalis, to which the gentle turns before emerging as a fly—if that combination does not tempt the roach, no artificial colouring will.

Anglers who find the fish off the feed under conditions which appear to be quite favourable, should bear in mind the thousands of tons of tar which have been, and are being, spread on our roads; the traffic breaks it up, and even months after it may get washed from street and roads into our rivers, and where it does not kill fish it may sicken them. I have seen far too much of its injurious effects not to dread the tar barrel and the spraying cart.

When I was a schoolboy and first read Walton (when I was supposed to be doing that blessed Anabasis of Zenophon or some other holy terror of boyhood) nothing impressed me much more than Walton's account of fishing a fly under water for roach. He says:

> "In many of the hot months roach may also be caught thus: Take a mayfly, or ant fly, sink him with a little lead to the bottom near to piles or posts of a bridge, or near to any posts of a weir, I mean any deep place where roaches lie quietly, then pull your fly up very leisurely, and usually a roach will follow your bait to the very top of the water, *and gaze at it there,* and run at it and take it, lest the fly should fly away from him. I have seen this done at *Windsor* and Henley-bridge, and great store of roach taken, and sometimes a dace or chub."

The very first time I tried this—it was on the River Lea in the old river, near Tottenham, one hot summer day in the sixties—I saw a big roach follow the house-fly or some other fly I had put on, and gaze at it, just as Walton describes, but some movement of mine scared him; afterwards I had many a roach in that way. In Walton's time doubtless the mayfly appeared in great numbers all along the Lea valley, now it gets scarcer every year in the upper parts, and has long been extinct in the lower. It means an immense loss of food—particularly for weeks before the fly appears, when it is crawling in millions on the bottom, and all the fish fed on it.

THE SHEFFIELD AND BOSTON STYLE OF FLOAT FISHING

The Sheffield style of float fishing for roach and other fish may be described as the opposite to the Lea style. In the latter the angler uses a long cane rod, perhaps twenty feet long, and fishes a short line, secured to the rod itself with no reel—much as in Walton's time; in the Sheffield style—which has only come into much more than local use within the last fifteen or twenty years—the angler uses a short rod and a long line and a reel. The reel line is extremely fine undressed silk, but wonderfully strong. The float is just a tiny slender quill, three to four inches long or so, on a short length of fine gut and a single small roach hook, with one or two small shot just enough to cock the little float, made of a quill from the wing of a crow, not much bigger than a tooth pick. The favourite bait is a single gentle, but any kind of bait which will stick on when cast with

some force can be used. The usual length of the gut cast—the very finest drawn gut—is about three feet, with the smallest hook made; of course larger are used also, the lead is distributed, one a foot from the hook, and the other a foot above that; this is thought by some anglers to cast better than if both are close together. Instead of nipping shot on to the extremely fine 6 X gut used, Mr Maltby recommends a bit of lead hammered out flat about the size and thickness of a threepenny piece, and same shape—this is folded across the middle to a half moon shape, and can then be easily nipped on to the gut and cut down if too heavy, or opened and taken off without injuring the fine gut. Any light reel of large diameter, but narrow across from side to side, so as to wind on quickly, and revolve quickly, will answer. The Sheffield rod,* as Mr J. T. Maltby, one of its most expert users says, is a " Kind of tool seldom seen in use about London." It is made in two joints, each about five feet in length of whole cane; with the last two feet of the top a fine bit of lancewood, greenheart, or washaba spliced to the cane, so that it is stiff, all but the very supple top piece. It is fitted with bridge rings, because they stand out well from the rod, and, as Mr Maltby says, prevent the line clinging to it in damp weather, and so impeding it as it passes through the rings in casting. " One very important item is the top nipple or runner at the end of the rod. This should be of steel, not soft metal," as the friction of the fine line soon makes grooves in the latter. The reel is fixed on the rod not less than a foot from the end of the butt, so as to " allow the rod to rest under the forearm, as a support to keep the rod steady."

Mr Maltby, of course, rightly insists on the importance of not letting the fish see you; and recommends a sitting posture on your seat basket. In baiting with a gentle the point of the hook should be inserted close to its thick end and brought out close to where it was put in, with the barb showing. This does not kill the gentle, and leaves it free to move about in a lively manner.

METHOD OF CASTING

Any angler accustomed to casting a fly and " shooting " the line, i.e., having some loose line hanging down off the reel, holding it in the left

*On Jan. 22, 1912, Mr J. T. Maltby, of Boston, Lincolnshire, who is one of the champion anglers of the district, gave a most interesting lecture on the Sheffield and Boston Style of Angling to the Gresham Angling Society. I gave a report of it in *The Fishing Gazette*, of Jan. 27, 1912, and give some extracts from it here.—R. B. M.

hand, and letting it shoot through the rings just as the forward cast is made, will soon pick up the Sheffield style of casting this light float tackle. Holding the rod in the right hand, with the float and cast hanging down from the end, you draw line from the reel in a large loop, make the cast and let the loop of line go; this gets the tackle out a short distance, then pull another large loop of line off the reel and repeat the cast, picking the tackle sharply off the water and sending it behind you in the air like a fly, then forward again, shooting the slack, and so gradually getting out to the spot you wish to fish As the reel line is so extremely fine " if the wind is blowing from the right of the angler, the cast should be made over the left shoulder, and if from the left, over the right shoulder "; this is to prevent it being blown against, and catching on, the rod rings. In casting a soft bait like paste I should advise the angler to mix with it a few fluffy hairs of pulled out cotton-wool.

This is a very artistic and deadly way of getting a bait on very fine tackle out, and it will appeal to fly-fishers, especially those who do not think fly-fishing the only fishing—or want to get chub, dace, roach, and other fish unfairly called "coarse" out of a trout stream. The "Illingworth" reel, or any reel made to cast a $\frac{1}{4}$-oz. weight, does admirably for casting out this light Sheffield float tackle. For many other excellent hints I must refer the reader to Mr Maltby's article (see note above).

FLY-FISHING FOR RUDD

Rudd will take the same baits as roach and often take a fly freely, and so will roach at times Exactly the same rods, tackle and flies as in fly-fishing for trout can be used, and dry-fly fishing for rudd where they are plentiful, and run a good size, is very good sport, especially when they are lying in shallow water and you can pick your fish, drop your fly near him, and see him sail up to it and take it—generally in a much more leisurely way than a trout or grayling does; in fact, you must give him time or you will only snatch the fly away.

SIZE OF ROACH AND RUDD

Up to about thirty or forty years ago roach over two pounds in weight were rarely heard of, but of late years, since roach angling became more general on our south of England rivers, in Hants, Wilts and Dorset a

great many fish over two pounds have been recorded. I have caught several in the Stour, near Christchurch. I have a beautiful fish of two pounds four ounces which was sent to me by my old friend, the late Rev. H. G. Veitch, in November, 1902, netted from the Wiley trout stream, near Wilton, and he sent slightly larger fish, up to two pounds five and three quarter ounces, to the British Museum. In November, 1903, I recorded in "The Fishing Gazette" a Thames roach of two pounds thirteen and a half ounces, taken by Mr G. Edmonds. But the largest true roach ever taken in this country was netted in November, 1904, out of one of the reservoirs of the Bristol Water Company. Mr C. Tate Regan, who has seen it, says it is undoubtedly a true roach; it was seventeen inches in length, and weighed three pounds ten and a half ounces. I have a fine photograph of it life-size. Rudd over two pounds in weight are not uncommon in some waters. Mr Regan says the rudd attains a weight of at least three and a half pounds and length of eighteen inches.

The illustrations show how to distinguish roach from rudd and chub from dace.

THE DACE

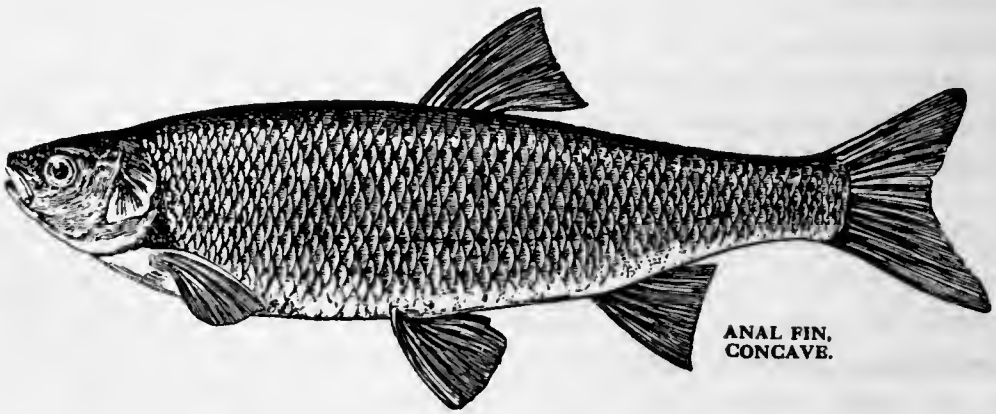
LEUCISCUS VULGARIS

German, *Der Häsling;* French, *Vendoise* or *Dard*

By R. B. MARSTON

THIS lively, silvery fish is caught with all the baits and with the same tackle and methods as the roach. It has the excellent habit of rising freely at the fly—natural or artificial—and is fished for exactly as in fly-fishing for trout. I have taken as many as a hundred dace in a day with the dry fly—using a double hook midge, as the dace has a way of ejecting a fly more quickly than any trout can do it, and the little double hook is much less easily got rid of in that way. Fly-fishing for dace is very good fun, especially when they run large, as they do in the Kennet, where fish of half a pound are common, and specimens of a pound or more are not very rare; one and a half pounds is probably the record. I am not sure that I have ever seen one quite that size. As a bait for a pike there is nothing, as a rule, better than a lively dace, as its silvery sides flash with its movements, and catch the pike's eye. The dace spawns in April and May, when it collects in great numbers on the shallows.

DACE.



SMALL FRY

GUDGEON

CYPRINUS GOBEO

German, *Der Gründling;* French, *Le Goujon*

By R. B. MARSTON

FRANK BUCKLAND, that delightful man and keen lover of everything connected with fish and other animals, tells us that when he was in the 2nd Life Guards, at Windsor, he used to devote much of his spare time to gudgeon fishing in the Thames, his constant companions being the two brothers Reid, the Riding-master and the Adjutant. Fancy these warriors gudgeon fishing! raking the bed of the river to attract the toothsome, bold biting little fish. He says:

> "The gudgeon's bite, as shown by the float, is a merry one. All on a sudden you see the float dance again, and then disappear under water. You must be very careful to strike very smartly every time the float arrives at the end of the swim, as sometimes the gudgeon coquettes with the bait, and if you are not quick enough when he is making up his mind, you lose him altogether. The gudgeon fisherman has to serve an apprenticeship as to taking the proper depth with the plummet. Unless the worm, which is the best bait, swims exactly right, you will catch no gudgeons, although there may be thousands in the swim."

He adds:

> "The fisherman who goes out in the punt with you must not be deprived of his glass of ale for his instructions in these matters. Be sure to take a frying pan with you, as gudgeon taken out of the water and immediately fried are delicious. Clean, wipe and flour them, then well fry in boiling fat; or, better, in oil, till they are crisp and of a light brown colour."

Buckland says that favourite spots with him for gudgeon fishing near Windsor were the deep ballast holes dredged out of the bed of the Thames by the dredging barges, from which he often procured, when out fishing, many fine specimens of what the bargees call "water bones," i.e., antlers

and other bones of the ancient British red deer and roebuck, and where, every now and then, he procured specimens of Roman swords and other antiquities. Mr C. Tate Regan says the gudgeon is unknown in Scotland but is common in Ireland, and that it rarely exceeds six inches in length, specimens of eight inches being considered exceptionally large. The finest I ever caught were in the Onny, near Craven Arms, but I think none exceeded six inches. I remember, as a boy, thinking what handsome little fellows they were, and wishing they were bigger; they have a transparent mother-of-pearl sort of appearance. The gudgeon spawns in shallow streams in May and June, depositing its pearly-bluish eggs on stones and weeds.

It is a favourite bait, both alive and dead, for other fish, and of late years great numbers have been used as baits by salmon anglers.

THE BLEAK

ALBURNUS LUCIDUS

German, *Blicke, Ickelei;* French, *Ablette*

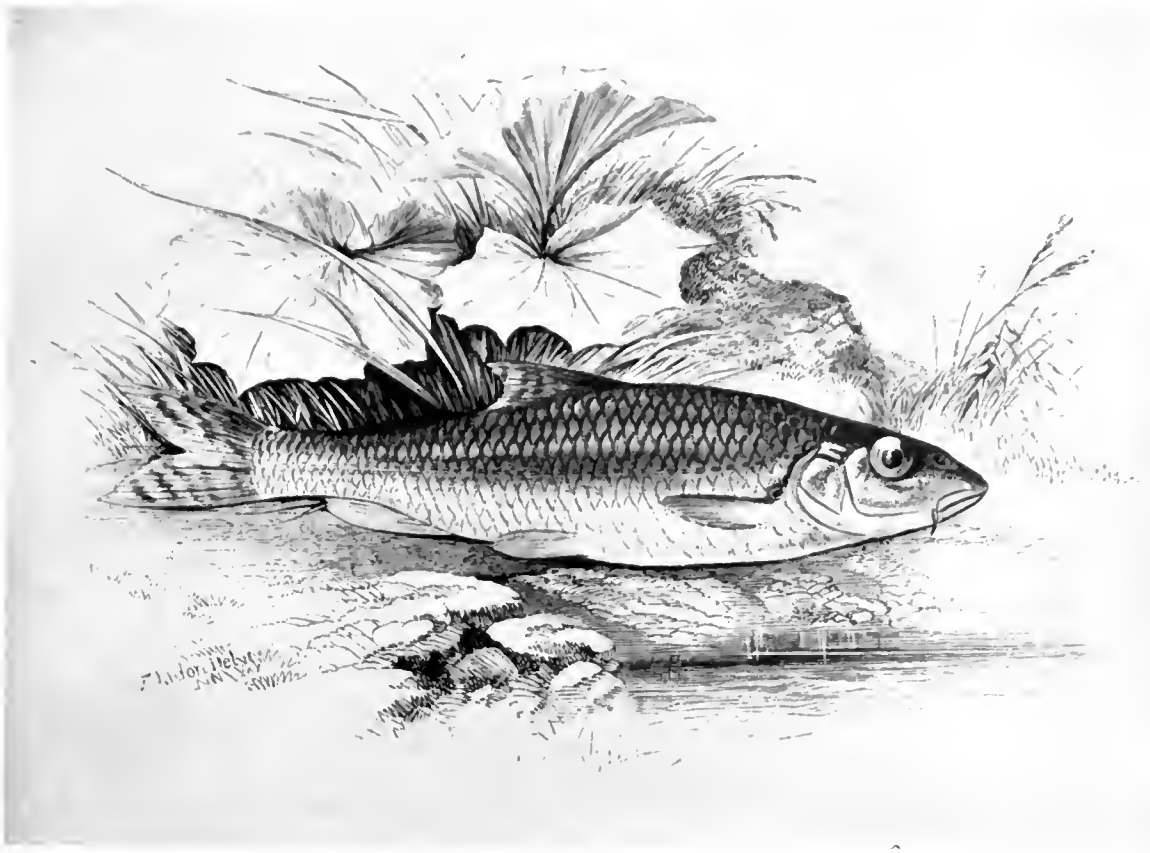
The bleak spawns between April and June, on water plants or on gravel; it is a pretty, lively little fish, and affords the young fly-fisher good sport, as it rises freely at any small fly—especially at an imitation or natural house fly on a small roach hook. It is a favourite bait for a big Thames trout, and for centuries has been famous as providing from its silver scales the so-called essence d'orient, of which 7 lb. of scales would make about 1 lb., from which artificial pearls are made.

"THE BULL-HEAD" OR "MILLERS THUMB"

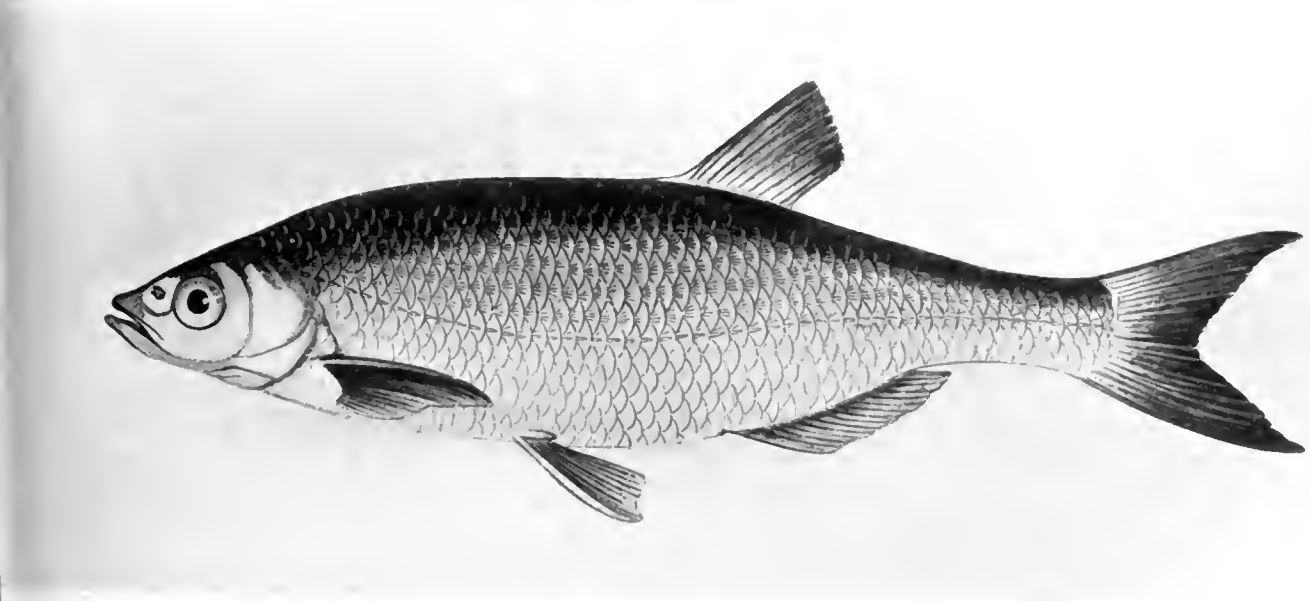
COTTUS GOBIO

German, *Der Kaulkopf;* French, *Chabot commun*

This curious and interesting little fish, which rarely exceeds five or six inches in length, is said to be, for his size, a great devourer of the eggs and young fry of trout and other fish, and therefore should not be encouraged in trout streams or fish breeding ponds. Buckland likens them



GUDGEON.



BLEAK.

to mice, as they run up and down the woodwork and piles of old timber bridges, and among the stones. They make a nest somewhat as the stickleback does, only it is a hole scooped out under a stone, Mr Regan says, in which about 1,000 largish eggs are laid, and the male watches the little clump of adhesive eggs and fry for about a month, driving off intruders. Buckland calls it the chameleon of fishes, as it changes its colour so much; sometimes it is yellow, then brown, orange, emerald green, etc. It is, as I know from experience, a good bait for eels and trout; its broad head is armed with sharp spines as points to the gill-covers, and kingfishers, grebe, and other fish-eating birds occasionally get choked in attempting to swallow a miller's thumb—only a week or two ago a friend told me he had found a dab chick in the River Chess choked by a small one.

THE LOACH OR STONE-LOACH

NEMACHILUS BARBATULA

German, *Die schmerle;* French, *Loche*

The loach is chiefly of importance to the angler as a bait for other fish, especially for trout and salmon. In Ireland Collaugh* ruadh (red-hag), i.e., stone loach, used to be, and in some districts is still, considered the most deadly bait for the big trout of the big Irish lakes, and for the big salmon of the Shannon. I know anglers who use the loach with great success in place of the sand-eel in spinning for salmon on the Wye—which is now such a grand salmon angling river, thanks to its splendid management in recent years.

The loach spawns in April or May. Mr Regan quotes an interesting account of the operations. There are two kinds of loach in this country: the stone loach and the spined loach—they are almost identical in shape; the spined loach (*Cobitis tænia*) has two sharp little spines which lie in grooves below the eyes. In the Isle of Wight Mr Percy Wadham discovered, I think, that they have only the spined loach. Perhaps the best way to spin a loach is to have a hollow metal spinning head, as on the Phantom.

*In Ireland one of the names of the loach is colley.

THE STICKLEBACK

GASTEROSTEUS ACULEATUS

German, *Stechbüttel;* French, *Épinoche*

The three-spined stickleback is most common in this country, though the ten-spined kind is also found in some districts. It is a most interesting little fish; it spawns from April to June, the male constructing a neat little nest of water weeds about the size of a walnut; there are two openings, so that several females, with head out on one side and tail out of the other, lay each, one after another, 80 to 100 eggs, which are fertilized by the male, who then watches over them very carefully until they are hatched, and also watches the fry for some days, and has to drive their mothers away or they would eat them.

THE MINNOW

German, *Die Ellritze;* French, *Véron*

Mainly useful to the angler as a bait for other fish, the minnow is also an important item in the natural food supply of pike, perch, trout, and, to some extent, also of chub, etc. This handsome and widely distributed little fish rarely exceeds three or four inches in length (Mr C. Tate Regan says that occasionally specimens of six or seven inches long have been taken—probably not in this country, at least in over fifty years' experience of minnows in all kinds of waters, I never saw one even six inches in length).

By those who do not often see young trout and salmon they are mistaken for minnows, and if the latter had an adipose fin the resemblance would be very close indeed. In their spawning season, in April and May, the males, and also the females, on the head and back get those pearl-like excrescences common to so many of the coarse fish at that time; the males have also scarlet and blood-red and green colourings on sides and at the fin-bases at this period, which leads some to think they are different species. I remember an angler coming all the way from Hungerford to London to show me a new species of fish—he really thought he had made a great discovery, and was astounded when I told him it was only a minnow in

his spawning dress. The minnow's scales are very small and delicate, and sometimes large patches of the skin are bare of scales.

Frank Buckland, in his "Natural History of British Fishes," gives an interesting account of the breeding of minnows in France, where they are used as food for young trout, salmon, crayfish, etc. The fish can be caught when they collect together on fine days in April and May, just before the spawning commences, and then treated by pressing out the eggs and milt, as in trout culture, or by collecting the small eggs, which can be found adhering together, and to stones, in little masses in the shallow streams after the fish have spawned; which they do with a great deal of fuss and splashing. The collected eggs can be hatched out in ordinary trout-egg hatching boxes, and the minnow fry form grand food for trout fry. Old angling writers speak of a dish of minnows cooked like white-bait, called a minnow tansy; I have tried it in Shropshire, but the little fish had a slightly bitter taste which I did not care for—in Germany the bitter taste is considered the chief attraction.

HYBRIDS

SOME of our writers have been inclined to question whether hybrids, i.e., crossings between fish of different species often occur in Nature. German ichthyologists recognize them as being of quite common occurrence. The best account of them, in English, which I know, is that in Mr C. Tate Regan's invaluable little work, "British Freshwater Fishes" (London, Methuen); in his chapter on this subject he refers to, and illustrates, hybrid salmon x trout; bleak x dace; bleak x roach; bleak x rudd; bleak x white bream; bream x roach; bream x rudd; carp x crucian carp; perch x ruffe; roach x rudd; white bream x roach; white bream x rudd. The late Mr Thomas Andrews. of Guildford, crossed our trout (*S. fario*) with the American brook-trout (*S. fontinalis*), the product being an ugly fish with zebra markings. The handsomest hybrid I have seen among the coarse fish is that between roach and rudd from a good water.

FISHING IN THE EAST

By H. S. THOMAS, C.S.I.

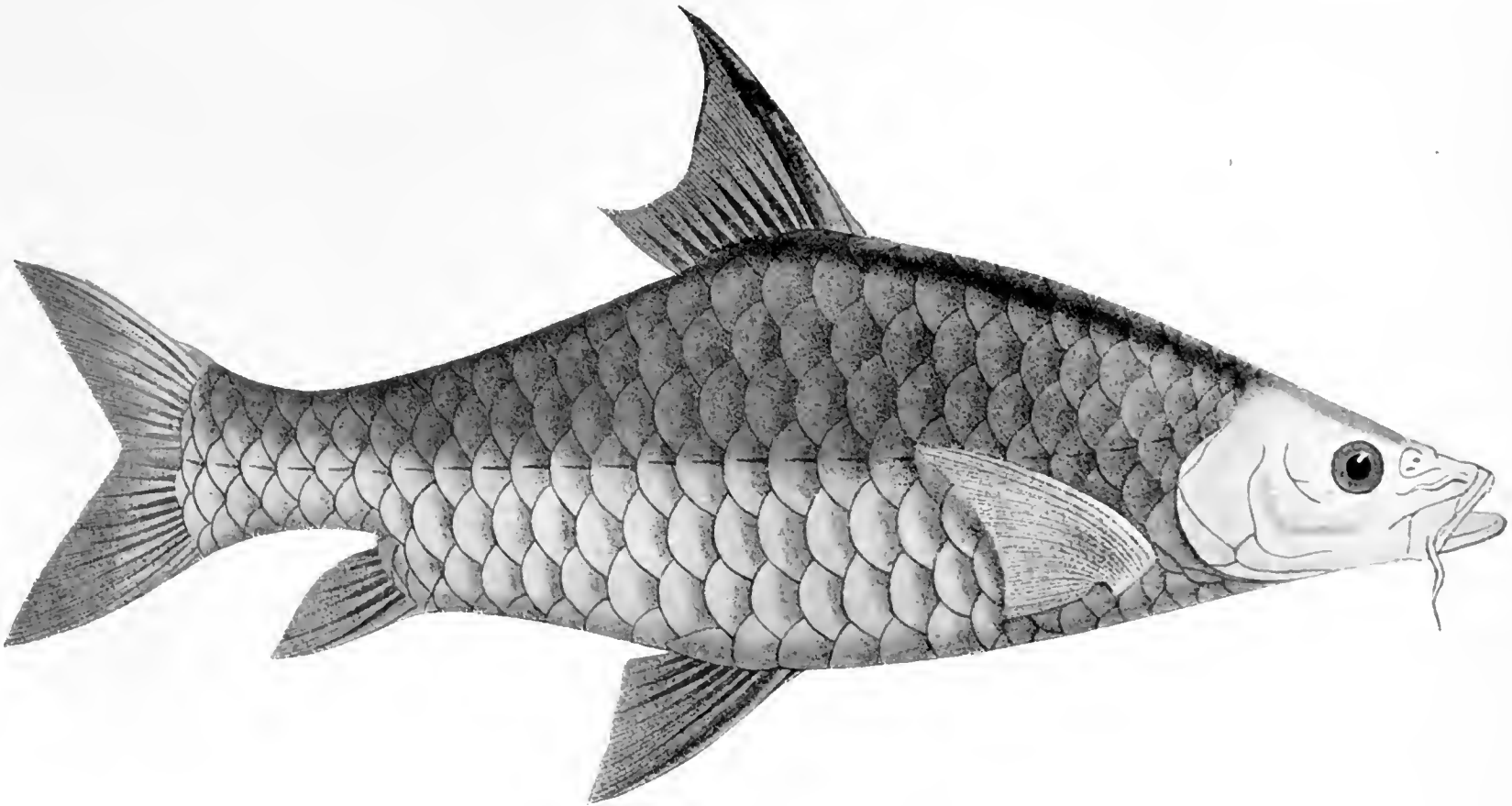
TURN we now to the East. Are there sporting fish there as well as in Great Britain, Europe, and the West? Let us see. The mighty mahseer will hold his own for sport in any lands, and has novel peculiarities which lend a charm of their own, calling for study and mastering, meaning to the angler "more worlds to conquer." The trout has a typical brother in the baril; the pike finds competitors in the marral, or pike of Indian waters, and the six-foot long freshwater shark, and siluroids of still greater weight; and as for carp, dace, roach and tench, and such-like minor fry, they are crowded out in sorts and sizes and sporting peculiarities by the seetul, the carnatic carp, the labeo, and many more of which anon. Estuarials, too, and sea-fish are well represented. Bear with them, then, bear with them, dear Britisher, though they are foreigners in a sub-tropical clime, for they all have the special recommendation that they gladden the heart of the exile in the East. It will need much compression to present, in a practically useful form, their several attractions, their virtues and their vices, within the compass allottable in such a comprehensive work as the present.

THE MAHSEER

Commence we with the top-sawyer of them all for sport, the mighty mahseer. And the following record may be encouraging. The "Fishing Gazette" of December 7, 1912, contains an angler's letter quoting a bag made in 1908, which gives some idea of mahseer fishing in the Irrawaddy, in Burmah: "Twelve days' actual fishing; forty-one fish landed (i.e., besides five times broken and two big fish lost), averaging thirty-five and a half pounds. Total weight, 1,466 pounds, largest ninety pounds; length sixty inches, girth thirty-four inches," and the writer recalls two mahseer of 103 and 104 pounds having been caught in successive seasons near Coorg, in the Madras Presidency. The captor, Mr C. E. Murray-Aynsley, himself has verified the weights to me, and so did Rowland Ward, who stuffed them, and several others kindly endorse the weights. While some few have been taken over 100 pounds, weights from three to thirty pounds are of everyday occurrence. Their size depends much on the size of the river fished, and their colours vary with localities.

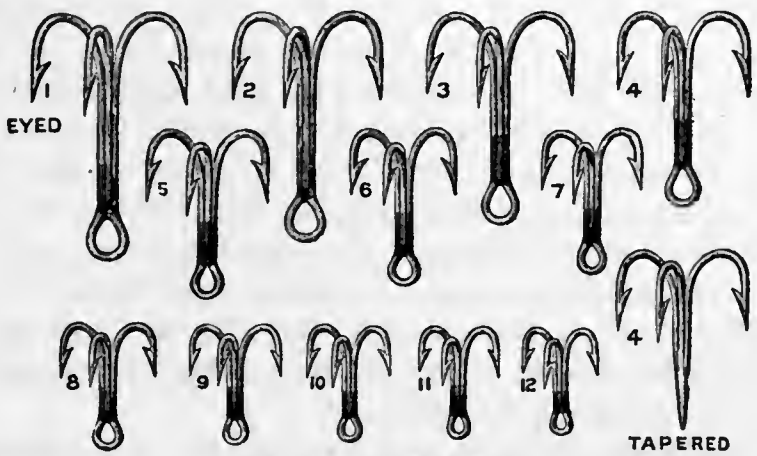
I have known them a light brown, with caudal and anal fins alone light blue; and a deepish blue, almost green, with dorsal, caudal and anal fins light blue, pectoral and ventral a light pink; and again light blue all over, all much the same shape, and the mahseer of the Bawany, which is a deeper fish, the colour gleaming a shade between gold and copper quite fresh from the mint. Near the sources of minor tributaries young mahseer of two or three pounds, taken with a fly and a trout rod, afford good sport to those whose lot is cast in such localities. But it is in the main rivers that they are usually fished for; and it is rocky rivers that they affect, mainly because in them are rock-bound pools ten or twenty feet deep or more, that never run low as the rocks keep up their depth. And the runs, too, not being allowed to spread out, are deep and fast. It is only among the mountains, and in the valleys at their bases, that you find such rivers. When they debouch into the plains, and are shallow, with sandy bottoms, it is other fish than mahseer that you must look for. In large deep waters you may still take them with a fly, if you are inseparably wedded to it, but you will take three to one as many, and those too, three times as big, with a spoon or small fish. For the fly you need not the many and varied "twa and saxpenny flees" commended for the salmon, but may be content with one, the Blackamoor, dressed on a No. 2 Limerick hook, eyed for preference, with alternative sizes, Nos. 1/0 and 3, if you must have them; body peacock harl dressed full, with a touch of silver twist for advertising glint; legs, black; wings, the glossiest black. My belief is it is taken for the large black tadpole so common in Indian waters, but no fish ever would tell me why he took it. Similarly a smoky-dun may be taken for a small fish, and so may Cock-o'-the-walk, made all of jungle fowl hackles, with silver body. As flies go, my faith is in the Blackamoor.

But once take to the spoon, and you will drop your British prejudice for the fly. The spoon may be used of various sizes, from two and a half inches long, the size of a dessert spoon, to, say, two inches long, according to the fancy of the fisherman, and all silvered, which suffices; or silvered on the convex, and gilt on the concaved side, again according to the fancy of the fisherman, for the angler will not fish hopefully and painstakingly unless he fancies his lure; some like a still smaller spoon, and it may be indulged in in small waters. But, for several good reasons, the spoon should be made of stouter metal than is ordinarily used for British spoon baits. One reason is that, the mahseer



THE MAHSEER (*Barbus tor*).

being largely a bottom feeder, you want to fish deep, for which purpose the spoon should sink quickly, and you must not think to compass the quick sinking by adding a sinker further up the line; you are fishing mainly in clear water, and the sinker would both scare fish and prevent the clean casting of the spoon, for it is only when all the weight is centred in one place that you can cast clean, and the spoon should not fall on the water with a scaring splashing flop, but drop lightly, with no more disturbance than a jumping fish would make. To achieve this light drop at any distance is an art, and it is simply impossible unless all the necessary weight is centred in the spoon itself. And the spoon should not be heavily armed with hooks, for many hooks are not at all needed, as the mahseer has a tough leathery mouth that presents a ready and good hookhold, without a single tooth in the way of getting a hold. And the mahseer, for good reasons of his own, which will be disclosed below, closes his mouth very hard and fast on any fish he takes, so that he is pretty sure to come home on your treble hook. One treble, sized according to the size of the spoon, is not only enough, but is best in small spoons of one and a half inches; for, when placed at the tail or broad end of the spoon, and revolving fast, it makes no more show than the tail of a swimming fish. But revolving fast it must be, as you are fishing in clear water, and a spoon cannot drive many hooks fast unless the stream is fast, or it is pulled fast, and fast pulling is a great mistake, for a feeding fish depends, more on surprising a dawdling or sickly or wounded fish, than on chasing down a healthy, vigorous and alert one



SCALE OF MAHSEER TREBLES.
(*Eyed and tapered are both made these sizes.*)

that dashes past him. It is a law of Nature that the predatory fish feeds most on the most easily captured, a law that results in the survival of the fittest in those preyed upon. So let your small spoon of one and a half inches have only one No. 10 treble at the tail or end furthest from the rod, for the mahseer will take in the whole spoon and close tightly on it. But if the spoon is larger, and about the size of a dessert spoon, two and a half inches, it will rotate strongly enough to drive a second treble close up to the small end at the head of the spoon, provided the hooks are small, say eyed trebles of No. 5 or 6. One such extra treble at the head is then a desirable addition, because the mahseer takes his fish as a trout does, by flashing past it and turning sharply, so as to take in the fish head foremost, and so you can give him the double chance of coming on the head hook, as well as on the tail hook. A two-inch spoon may be mounted the same way with hooks three sizes smaller. But both hooks should be as close up to the spoon as possible, as they are then easier to drive than if they have to traverse a longer circuit. The treble hooks should be the eyed trebles, and should be attached to the spoon by soldered rings. On no account should split rings be used for attaching the hooks, as split rings drink and hold water in the split by capillary attraction, and so inevitably rust, and fail you with a heavy fish. Tackle makers affect split rings, as they are cheap, and easy to use, but anglers should abjure them.

Another reason for having the spoon made of somewhat stouter metal than is usual is that mahseer have no teeth at all in the mouth with which to hold a slippery captured fish, and in place of teeth in the mouth are endowed with an exceptional power of jaw, which enables them to stun a captured fish by a sudden blow of compression, a sort of instantaneous death squeeze of the boa constrictor, and they would seem to have also the power of hardening the leathery mouth, as the tiger hardens its pad for a blow, so that a spoon is sometimes crumpled up like a bit of paper. This blow of compression will also break and bend treble hooks, which have to be specially made of stouter wire. But when the angler is prepared for this with extra stout spoon and extra stout hooks, both specially made, this compression means also that the mahseer will press well home on the hooks, and it is therein favourable to fishermen. The only teeth a mahseer has are in the pharynx.

Another peculiarity of the mahseer is that he does not take your bait after the leisurely manner of a salmon or trout, simply resuming its

previous position after quietly taking your fly, but comes at your spoon with a rush and sudden dash that will sometimes jerk a salmon rod right out of your hands if not held preparedly, and many a time is tackle broken by this sudden dash at your bait. So sudden and strong is it that you must altogether abandon the home idea of spinning a spoon with the usual stiff pike rod, and must have, instead, a fly rod as pliable as a Castle Connel rod, so pliable that it will anticipate, be much quicker in action than, any possible lighthandedness of yours, and will break the suddenness of the blow by promptly bending to it, and so letting the line run out, while still keeping touch with the mahseer by the springiness of the rod.

And yet, again, a peculiarity of the mahseer is his first grand rush. So mad is it that for the first few minutes you cannot tell what you have on, a five-pound fish or a fifty-pounder. It is only by its continuing that you begin to guess at the probable size of your fish, for, of course, you are bearing on him all your rod and line can stand, taking all the toll of him you dare. The question has been asked disparagingly:—Does the mahseer leap into the air like a salmon? No, never; but his first impetuous rush is much more difficult to deal with, and there lies novelty of sport. Other rushes he will make again and again if you let him recover his breath ever so little. But the first glorious rush it is that generally settles the question who is the better man, you or he. Though the salmon rod is bent, and straining all you dare, still the line is flying out at such a pace that if you touch the reel there will be a break for a certainty, and if you put a finger on the line it will cut through leather glove and into your hand like fire.

And then to land him. Here, again, the familiar gaff must take second place, because the scales of the mahseer are so large and hard that no gaff will penetrate except in the soft parts of the belly, and it is safer to shelve or handle, netting being impracticable except with the smaller ones. Handling must be done by a trained attendant approaching the exhausted fish from behind it, placing both hands under it from either side, one thumb in each gill, and gripping tight all he knows.

The spoon may be used from the shore if the character of the river permits, or in a large deep river from a coracle or other boat rowed up-stream, with some thirty yards of line out, so as to be well out of sight of the boat.

And there may be slow-running water; deep, gentle, tempting eddies close to the bank, not so suited to the proper working of a spoon, but

affected by big fish. There it will repay your pains to be at the trouble to put up a dead fish. Some use the silvery *chilwa* (*Chela argentea*) as bright and showy. But it is soft, and goes to pieces too soon. The diminutive species of marral (*Ophiocephalus gachua*) or dok of Hindustani, is much tougher, and when about four inches long, tail included, makes an A1 bait. You may recognize him by his family likeness to the marral (*Ophiocephalus striatus*).* With one treble hook, No. 8, threaded with a baiting needle from vent to mouth, and pulled home, and fixed by one hook of the treble being embedded, very little hook is shown. Thread a sinker on the snood, sew up the mouth so as to keep the sinker in, and loop snood to spinning trace. Keep well back from the bank with only your rod point over it, and kneel that you may not be seen, and when moving position, tread lightly, that there may be no vibration from the bank, and gently dropping in your fish bait, ease it off that it may glide naturally to the bottom, and dawdle it about slowly, up and down and round about, for there is no need for it to spin. You can dawdle it much slower than you could a spoon. But though doing all you know to make it like a living fish, you will only succeed in making it look like an ailing one that can be easily captured, and that will be its chief recommendation to a predatory mahseer.

All the above fishing is ordinarily done in clear water, and that should be constantly kept in mind as emphasizing the necessity for keeping out of sight. Mahseer may take better when there is a very slight spate on, so slight that you can still see with ease the small pebbles at the bottom in four feet of water, but anything over that puts them down, and melting snow water is fatal. As a slight colouring which is favourable can so easily be overdone, the exact favourable condition occurs but seldom, and clear water is the rule. When the river is further coloured your only hope is in a live bait, say six inches long, made stationary at the bottom with a sinker or bullet, which should be attached to the running line, say a yard from the bait, by a thread that will certainly break off before the line breaks if the bullet gets hitched in the bottom. Thoroughly secure the rod in position on the shore, and take two turns of the running line round a stone of about four pounds weight, so that as the line is jerked the stone's weight may serve to strike the mahseer. And so leave as many rods as you like, and for the night, too, if you fancy it. The bottom-feeding mahseer will find them by scent. But you must use some other bait for

*Minnows, bleak or gudgeon, bottled in formalin, save the angler all trouble in catching bait. They can be had of any good tackle-maker, and the preservative makes them far tougher and more durable than fresh fish.—ED.

I. THE CHILWA (Chela argentea)

II. LUTIANUS ROSEUS

III. BARBUS FILAMENTOSUS

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[illegible] all trouble in catching bait. They can be [illegible] for tougher and more durable than fresh fish.—ED.

this mode of fishing than our above-mentioned little friend *Ophiocephalus gachua* or dok, as he is a breather of atmospheric air, and would drown if kept at the bottom.

The same method may be used with a paste bait of wheaten flour worked into a tough dough, but the rod should be in the angler's hand for ready striking, with a few yards of free line close to the reel, so that he may see when it is being taken stealthily out, and strike at once. And other fish than mahseer can be taken this way, to wit, the *rohu* (*Labeo rohita*), taken with a rod up to fifty-four pounds, and other labeos, as we shall see below, from two or three to fifty pounds, and siluroids not a few, *quæ*—I am warned by my Latin grammar and the space allottable—*quæ nunc perscribere longum est.*

But perhaps the straightest tip of all is a friend's. I mention it in confidence. With a wealth of daughters, he placed one on sentry-go over each located rod, furnished doubtless with a book and knitting, but also with a police whistle to signal a runaway thief of a fish, when pater came up at a double to take the rod and do the playing. This tip is not for bachelors.

There is yet one more plan practised near Jubbulpore, but it seems confined to waters in which the fish had been educated to it by being habitually fed. The place to be fished must be baited in advance for two or three days consecutively with a parched grain that floats (*chabena*), your man throwing in a small handful every now and then for hours, till fish come up from long distances and congregate. On the fishing day a like grain, or a well imitated counterpart of it, is threaded on a hook so that it cannot pass the barb. Fish up to forty pounds in weight have been caught in this way. To me the method has no attractions. But it has its votaries, so it is not left unmentioned.

The best season in the year in which to fish for mahseer is an essential piece of knowledge. There are two main principles that govern it: the action of the monsoon and the melting of the snows. When the rivers are in flood fishing is out of the question. When they begin to clear is the best season, and that is generally from October 1 to December 15, after which cold winds set in and put the fish off feeding; and of this good time the best is the earlier month. Fishing may be continued more or less indifferently till the end of March, and is liable to be interrupted locally in Southern India by the river being coloured by the ploughing of rice fields. The Godavery has its peculiarities, and so has the

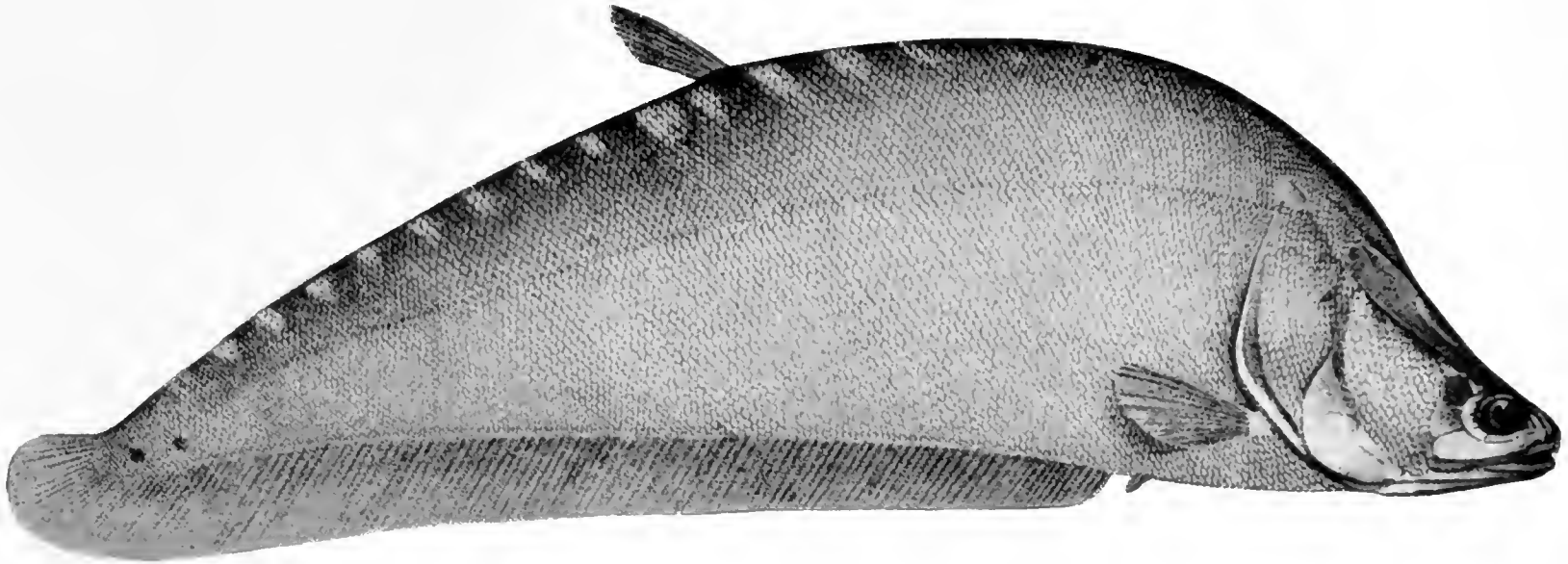
Ganges, but otherwise the rule may be accepted generally. In Northern India, in the Poonch, for instance, and in other rivers there which run from snow-clad mountains, the melting of the snows will send down snow-water, discolouring and chilling the water, and putting the fish quite off the feed. That is after the middle of April. In rivers not affected by snow-water, and in those very slightly affected, as in the stream near Rawalpindi, fishing may be continued till the rains commence in July. Speaking generally for Northern India December, January and February are blank months, and the two best months are March and October. In all places thunder puts fish off the feed, and so does impending heavy rain. In Burmah commence fishing on October 1, or even the last week in September.

The running line should be strong, and thoroughly good, and 120 yards of it, as the first rush is very violent, and, as soon as ever you can get on terms with your fish, will need to take all the toll your rod will bear. I have had a fish quite uncontrollably run me, from a well-strained rod, within a very few yards of my 120, when he was out of breath from my heavily bearing on him, the line was recovered, and the ball continued.

The gut must be the best salmon gut to stand the strain, and should be single gut near the bait, because of the clearness of the water. Specially annealed wire may be used.

THE SEETUL

The seetul (*Notopterus chitala*) is a sporting fish with peculiarities that have to be studied. It attains four feet in length, and is deep, but flat-sided, not thick, and is silvery all over. When I had my first introduction to him he was rolling over on the surface of the river, displaying his silvery sides, and making the water astir with his movements, which seemed to say that he was a surface feeder. Seven others present, good anglers, were all fishing for him accordingly, and with a large spoon, because of his size; but to little purpose, till at last one seetul was taken by one of them, and there was a chance to study the fish's formation. What we should call the chin in a human was as flat as a board, indicating bottom feeding; the mouth, as may be seen in the plate, was placed level with the bottom, confirming the indication, though there were no feelers, the absence of which seemed to say that it was not wholly at the bottom that he sought his food. The mouth was also very small in comparison with the size of its owner, which was suggestive of the prey taken being



THE SEETUL (*Notopterus chitala*).

small. And the dentition was feeble. And yet I knew from Day's "Fishes of India" that this fish ran to four feet in length. Casting about as to what might be his natural food, and not having an opportunity to examine that truthful organ that tells no lies, his stomach, for my brother angler could not be delayed in the middle of his fishing, I noticed that the little freshwater mullet (*Mugil cascasia*), not exceeding four inches in length, was crowding up the fish-pass in numbers. So then and there rigging up light spinning tackle to suit the tiny three-and-a-half-inch mullet which I selected, I fished slowly close to the bottom, with a light fourteen-foot rod with which one could feel any touch, and struck for a slow fumbling. It was fine to see a sixteen-pounder leap four feet in air, not once, but again and again, and again. He had a temper of his own, and no mistake, and ran out the line freely. And so had others taken the same afternoon, making as spirited a fight as could be desired. I fished close to the bottom, because the fish's form induced me to conclude that the bottom was largely, though perhaps not wholly, his place of feeding, and I attributed all the rolling on the surface to play, as in another fish to be mentioned presently. It has yet to be discovered by experiment, for which I had not the opportunity, whether he will not take the same bait spun otherwise than at the bottom. It is said to take a worm freely, and to grow to eighty pounds, and that its belly is "uncommonly rich and well flavoured." He is a right good sporting fish, and has served to point the moral that in fishing for strange fish it is necessary to study the indications afforded by their peculiarities of form, and a good angler-naturalist should be able to tell more than half a fish's habits from its form.

This fish is taken in the rivers of Northern India. Its counterpart in Southern India, *Notopterus kapirat*, runs only to two pounds and under.

LABEO CALBASU

There is yet another fish with a singular peculiarity of form and manner of feeding that makes him, of all fish I have ever known, far and away the most difficult to take with rod and line, and therein lies the attraction of this sort of fishing; for is it not skill in conquest that is the very essence of sport? And here we have it in the very highest degree as regards anglers, for I never knew more difficult fishing than the labeo affords, and the skill attained in it by different anglers is more marked than in any other sort of fishing. It is similar in some respects to roach

fishing, in the nicety of which the habitual roach fisher prides himself not a little; it is similar, with greatly emphasized difficulties of achievement, and rewarded by the weights of fish taken being enhanced from ounces to pounds, the fish running ordinarily from one pound to two, three, five and seven pounds, and in some places to fifty-four pounds. In Burmah they run larger still, one species of labeo being there recorded as nearly five feet long, which, in such a thick fish, must be a great weight. It should appeal to the roach fisher, let prejudiced trout and salmon fishers scoff as they like at float and pond fishing. And to this it may be added that scoffers are invariably converted when once they have tried and learnt it. But they are never induced to try it without an exordium like the above. So it is necessary, and will, I hope, be pardoned. For example, let it be added that four rods in three days caught 678 pounds, and of these one rod alone took 361½ pounds, an example of superior skill and better suited rod. And this Madras bag has since been thrown in shade in Northern India. One rod took eighty pounds in three hours, besides being broken by a monster.

But what are the attendant peculiarities of the labeo? The mouth is not a mouth in the ordinary acceptation of the word mouth in the animal creation, in that there is no mouth cavity behind the orifice, the tough muscular lips ending abruptly in a constricted throat, and the mouth opening itself is not forward as in most fish, but is under the snout, being so placed for the purpose of sucking things up off the bottom, and the fish has to be well over its food to get its mouth over it, and the orifice is also comparatively small, and fimbriated, or surrounded with quite a frill of short tentacles, which tentacles are presumedly used as fingers for gathering the food into the orifice, which for brevity we must call, by courtesy, the mouth. It is intelligible, therefore, that the manner of feeding is, as might be expected, exceptional, and what the angler calls a bite is singular indeed, as we shall see, and has necessitated exceptional angling.

It is true that anglers who know nothing of these peculiarities of formation, and fish for labeo as they would for English fish, will also catch them, but only, only in the rains when they are biting boldly. At all other seasons such anglers are simply not in it, and have to give it up as useless. I went 200 miles to learn from one such who had caught them for years, and was recognized over a wide area as the authority on this fishing, and he obligingly came sixty miles to meet me. He promptly told

I. THE MAHSEER (Barbus Tor)

II. LABEO CALBASU

III. THE MAHSEER (Barbus Tor)

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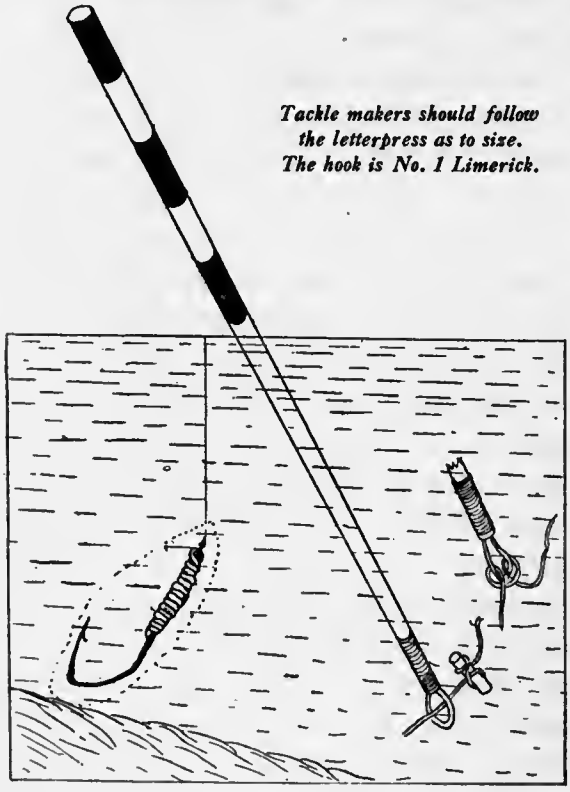
me that he would not have come except to oblige, as the time of year was hopeless. He had fished only in the bold biting season, in the rains, when a rohu will promptly take a pike float under water. In the shy biting season, as far as his methods were concerned, his words were confirmed by results. He caught next to nothing, and those few only little ones, for, with his large float, he could not see the subtle bites in that season, and even when seen on my more sensitive float, he tenaciously held to it that they must be the bites of small fry. And so would ninety-nine men out of a hundred till they learnt better. Fishing close to each other at the same time the methods to be given below resulted in a very good bag, including individuals of twenty pounds and thereabouts. I find it recorded that I took twenty by my methods to one taken by his. And devices that will catch them in the dull season when none others will, are equally available in the bold biting season, and will even then give you a decided advantage over others. Similarly a friend using my methods caught seven to one of the fish caught by his companions in the ordinary English manner, and I have caught twelve to one with expert natives fishing by my side. It points the moral that the mode of fishing should be adapted to a study of the idiosyncrasies of the fish.

Among these is yet another not mentioned above. This fish, though not showing his sides above the surface like the seetul, still comes close up to it, rolling about and making the water boil, which might equally lead you to think he was a surface feeder. But his form tells quite another tale. He simply could not feed at the surface if he tried. He is only in high spirits and at play. It is a most welcome indication, however, that he is on the feed. Throw in a little ground bait close around your float, and he will follow it down, and draw others after him.

And what is the practical use to be made of this preliminary study of natural peculiarities? It is with bait actually resting on the bottom that we must fish, the float must be as sensitive as we can make it, the running line must be fine, and the sinking weight, for which the roach fisher would use split shot, must be so disposed as not to affect the sensitiveness of the float, and lastly the rod must be one facilitating quick striking. Take your seat exactly where you are going to fish, and use no separate plummet, but a strip of lead round the bend of the hook you are going to fish with, plumb the depth exactly, and straight under the point of your ten-foot rod held as you will hold it when fishing, plumb it till you get the adjusted float riding at an angle. The hook may be a No. 1 Limerick, eyed

for preference in an eastern wax-drying clime. Attach no shot as sinkers between the hook and float, as that would falsify your plumbing and destroy the set of the float. And yet a sinker of some sort is necessary to take the bait as quickly as may be to the bottom, for if it is slow in sinking it will be knocked to pieces in passage by numerous unworthy small fish, and never reach the big labeo at the bottom, or reach them spoilt as a bait. Take a few turns of soft lead wire round the shank of the hook well away from the barb, and cover the whole with a ball of dough made of wheaten flour as for roach. There is no better bait. Use no cotton to keep it in place, and never mind if the fish steal it again and again, as it will serve as ground bait to bring other fish about you, and the biggest will see for themselves that they get the first look in.

For float the finest roach float will not serve you. A porcupine quill is all too coarse an implement. Take rather my "Detective," and follow the instructions for making it, not casually, but exactly. Take a long tail-feather of a peacock. It is oval. Measure across the broadest part of the oval, and cut off and throw away all the part nearest the bird that is more than one-eighth of an inch in thickness. Cut the rest into six-inch lengths till the stem gets to less than one-eighth of an inch in thickness, when it runs too thin and frail to stand much use. Remove the harl, not by stripping, as it tears off the shiny waterproof skin which saves the float from getting sodden, but by neatly snipping. To the thinner end whip a loop of thick salmon running line, projecting a quarter of an inch, and dip the loop in varnish to stiffen it. The loop is for attaching your running line to it. At the other end the surface of the very end is left white to attract the eye, round it, for half an inch downward, paint a band of vermilion in oil colour, then leave a half-inch band the natural white, and so alternate the red and white till you



Tackle makers should follow the letterpress as to size. The hook is No. 1 Limerick.

have three vermilion bands, the rest being left the natural white. The object of the alternating colours is to aid the eye in detecting slight and slow depressions of the float, as they are very subtle. The line is attached to one end of the float only, which makes the float more sensitive than when attached, after the English fashion, to both ends. And thus attached, with the float sitting at an angle, the first indication of a bite is the float's sitting upright, which attracts attention at once.

For quick striking, a rod must be stiff and light. The material ordinarily used, and the simplest, if not the best, is the species of Indian bamboo reed called in Calcutta a ringol, and ten feet long is the best length. You cannot see the stealthy bites further off, and you cannot strike as quickly with a longer rod. These reeds are sold seventeen or eighteen feet long in the Calcutta market. At the thin end let it be one-eighth of an inch thick, not more, and saw off a ten-foot length. The butt end of this will be too thin to hold conveniently, so take sixteen inches of the discarded thick end, sawing it off so as to have a natural bamboo joint at the thickest end to form a butt. This thick end will be hollow enough, with a little fitting, to slip the butt end of your ten-foot rod into it, right down to the bamboo natural joint, fit well and firmly, and fix with glue. It should make a perfect handle, and the whole rod should weigh eight or nine ounces without the winch. It may be made in two joints. Messrs Oakes and Co., Madras, used to make these rods excellently. The bamboo has sometimes to be straightened with oil and heat.

Doubtless they could be made in England of split cane if it is worth the while of tacklemakers to build labeo rods. Their required stiffness may be tested as follows: lay the rod on the table, and place a thick coin on the table, just touching the point of the rod, and on its left side. Then strike to the right, parallel with the plane of the table; that is, strike away from the coin. If the rod point answers to your strike by springing to the right, that is, springing in the direction of your strike, and leaving the coin undisturbed, such a rod will strike your fish promptly. But if the rod is not stiff enough, it will first send the coin flying to the left, and afterwards recover its straightness, and then, not till then, answer in the direction of your strike, thereby losing time, and your fish goes off smiling. And the required stiffness should not be at the expense of lightness, for only if the rod is light can you strike quickly and yet with not so much momentum as to break your single gut. The split cane rod can probably be kept within the same weight as the ringol.

The running line must be fine, or it will neutralize the sensibility of the float, and when sodden and sinking between the float and the rod, will also impede the quickness of the strike. In length, thirty yards is enough for most labeos, as their habit is generally to bore down to the bottom, not sulking, but not travelling, though fighting doggedly as if they thought they could get deeper than the bottom. He will keep at it, all honour to him as a die-hard, and you should be keeping the strain upwards. Now and then a really big one, or a rohu or catla, may treat you to a rush, and it would be a cruel ending to be unprepared for such luck, so it is well to have 150 yards, considering how light your tackle is, and if your running line is fine, a winch of three and a half inches in diameter will hold it.

The places where you will fish for labeo are large, artificially excavated, river-fed ponds, with stone steps for the bathers, and sometimes stone faced all round, some of them squares of a quarter of a mile on each side, some even more, but mostly less. They are plentiful all over India for ablutions in a tropical clime, and the claims of caste. Being river fed, all sorts of fish come down the feeding channel as fry, and attain size in these ponds or tanks, or ghats, as they are called. There you will get other fish beside labeo, such as the mirga, the olive carp, the white carp, the rohu, the catla, the freshwater shark, and the chilwa, all to be noticed below, and the bites of which will present no difficulties to the ordinary angler. It is to the bites of the labeo, and when to strike, that we must recur.

The first indication of a fish being at your bait will be that the slanting float will stand upright. Then be closely on the alert, but not premature, don't strike till you see a rapid vibration, a mere tremor or quivering. The float will go down and up, down and up, again and again, some ten or twenty times or more, and may be a little more each time, and slowly, and so little that only by aid of the bands of red and white can you detect it. When there comes a rapid, very rapid, succession of small bobs, then strike instantly. There is not a moment to be lost. On one occasion I had my float go down again and again till the white top end was under water, but I did not strike till there was the merest tremor just visible. For that I struck instantly, and got a seven-pounder. While this bite was going on a friend on my right and another on my left were each playing a fish, having sidled off to get away from me.

It is well to fish side by side, say six feet apart, as so many bites are lost,

and the stolen bait acts as ground bait, and brings fish about you, but not more than three together, or you cannot separate to play a big one, and keep free of your neighbours. And in fairness, all should fish at the same distance from the bank or steps.

A little ground bait thrown in from time to time on the shore side of your float will bring fish about you. Thoroughly well-sodden bran in balls will sink fast enough, and answer the purpose. Dry bran will float away on the surface, and do more harm than good.

And how shall I satisfy the unbelieving angler that my insisting upon the exact time to strike is not all fidget? By an experience and then an explanatory reason. H. wrote me: "You would have given £100 to see R. fishing with your book in his hands. 'It's all lies, all lies,' he cried, nearly flinging the book into the water, till after two days, striking harder and harder in desperation, he struck a two-pounder, which went over his head and was stunned against the wall behind him, and his rod was in pieces. 'There's something in it,' he said." Meanwhile H., by his side, had taken eighty-three pounds weight. Similarly every unbelieving newcomer, wedded to his Western views, will miss bite after bite till he gets to disbelieving the book and himself and everything. It was only H.'s example by his side that kept R. at it for two days, hoping and trying. From the third day and after he was a successful, happy angler.

And what may be the reason for the peculiar biting? I fancy it comes from the fimbriated mouth orifice; the fish in pushing down on the bait getting the short tentacles round it, and when they have got a grip of it and are thrusting it into the mouth, then comes the rapid vibration which, in the bold-biting season, is emphasized to a quick succession of bobs.

The above remarks are applicable only to smooth-surfaced water, which is the general, the almost universal rule in these high-banked, sheltered reservoirs. Exceptionally, as in the magnificent Hassan Sagar tank at Hyderabad, in the Deccan, tanks are open, extensive and wind-swept, with a surface of waves in which it is impossible for any conceivable float, rising and falling with the wave, one moment submerged, the next lying flat, to indicate the minute bites of the shy-biting season. Anything floating on the wave is useless. *Heu inimica fata!* The tank is full of five, ten and twenty pounders. What can be done now? Take a very fine tough light rod three feet six inches long, that will bend and not break. The natives use a carefully selected branch of bamboo, as fine as

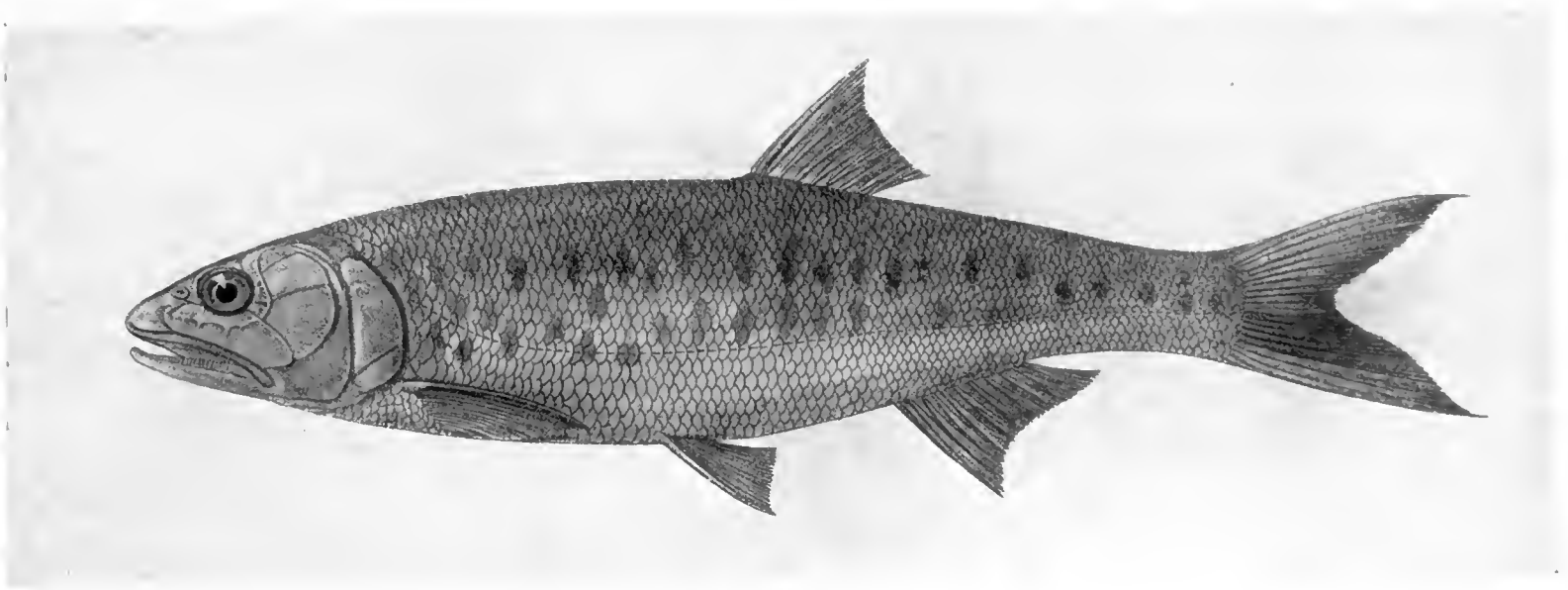
any fly top, and fined towards the tip to one-sixteenth of an inch; to the point of this whip six inches of the silicious bark of a large bamboo fined much finer still, and whip a very light ring to the tip of it. Lay your ordinary labeo rod handy by your side, and pass the running line from its point through this ring, and holding the butt of the little four-foot rod in your hand, cast out your bait and let it sink to the bottom. Then carefully gather in the slack, and hold the little rod with a finger tight upon the line. You will see the exceeding fine tip of your little rod bend to every nibble, and must strike, as before, to a rapid tremor, and strike hard with such a yielding rod. If you feel you are into a fish snap up your ordinary labeo rod to play it, and let the little four-foot rod go into the water. It may disappear altogether, but will be recovered with the fish, which may be only an ordinary three or four pounder, or a twenty or thirty pounder worth all the trouble.

In this fishing, whether in still water or in waves, the natives have a bare unbaited hook, or a couple whipped back to back, one inch below the paste-baited hook. When the gut is thoroughly soaked and limp, the bare hook lies flat on the bottom, and is not noticeable. I have known the fish bite so warily that a party of four rods in four days caught nothing except on this extra bare hook. And I do not think it is fair to call it more unsportsmanlike than the extra trebles that whirl round and round a spoon. Nor is it stroke-hauling or snatching, for you never see the fish, and it is stationary, and never comes into play till the bait has actually been taken into the fish's mouth, and only on that particular fish.

The rohu (*Labeo rohita*), though one of the same genus, is worthy of separate mention as having been taken with the rod up to fifty-four pounds, and as being exceptionally well flavoured. And *Labeo gonius* is said by Dr Day to attain "nearly five feet" in length. With such a thick and deep fish that must mean great weight.

In the same waters, in the same season, with the same bait and tackle, you may sometimes find another heavy customer in a catla (*Catla buchanani*), attaining at least six feet in length, recorded as having been taken by the rod up to seventy-seven and 100 pounds. It suits his mouth formation best to have the bait a little off the ground.

You may be disappointed by a white carp (*Cirrhina cirrhosa*), weighing only a pound or two, not exceeding one and a half feet in length, and biting much like a labeo taking your bait; or cheered up again with a mirga



THE BARIL (*Barilius bola*).

(*Cirrhina mrigala*), which has been taken with a bait up to thirty-four pounds, and bites in a sensible way.

Occasionally, but very rarely, the freshwater shark (*Wallago attu*) will take your paste bait, but he prefers a live bait picketed at the bottom, as for mahseer, in coloured water. He runs from two or three to six feet long. We used to set a heavy rod or two so baited near us while fishing for labeo, and jump up for it when the reel gave tongue. He is not very dashing in his movements, but goes off much like a pike.

The little silvery chilwa (*Chela argentea*) attains only six inches in length, but takes a fly, and is said to be good eating. A brother of the angle writes me that in my book the chilwa is treated with scant ceremony, though it gives good sport with a fly, failing heavier fish. He had a little rivalry for one hour and a half; his friend got 140 and he 162, which is at the rate of nine fish every five minutes. While fishing for labeo ourselves I did not like our willing attendants being nothing but lookers on, and gave them each a No. 14 hook, with one length of gut, a string, and a miniature "Detective" float, with a twig of bamboo for rod. It was one bob of the float and there was a flying fish in the air going shorewards. They got ten times as much as they could eat, and were happy men. And *cur non*, as a generous sportsman put in a double sense over the gravestone reared to the memory of his good greyhound.

In this fishing you will sometimes get small turtle. The white bellied ones make good turtle soup, the black bellied are as evil smelling as a sewer. Some turtle in rivers are so large as to strain a stout salmon rod to its utmost. Native fishermen will form semicircle and dive for them, spearing them under water, and sometimes having a toe bitten off.

BARILS

Barilius bola is found in rivers of Northern India, and is called the Indian trout from its rising to a fly boldly, being spotted, and somewhat trout-like in form, and fighting gamely, though it is not one of the *Salmonidæ*. It averages three-quarters of a pound, and attains two pounds, and swims in shoals, and I have had three at a cast. They have a large mouth, and take small fish freely, making them their chief food, and pursue your fly as if it were a fish or black tadpole, and prefer the fly pulled rather fast up-stream to floating slowly down-stream, as an English trout would like to see it. The fly may be the size of a large lake fly for trout, hook

generally No. 6 Limerick No. 9 in fine water. I found a black fly best, others preferred a tinsel body with junglecock wings, and legs of junglecock hackle. Season, October to end of May, March, April and May being the best months.

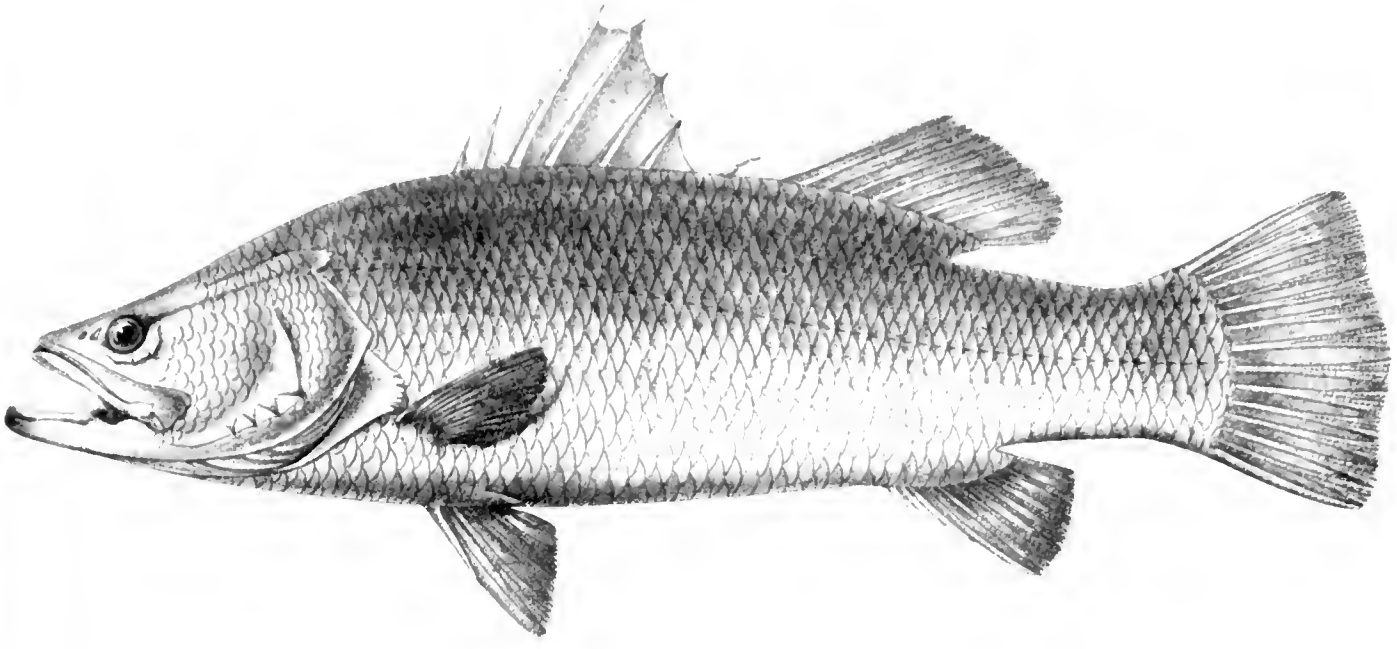
The lesser barils (*Barilius canarensis*, *B. bakeri*, *B. gatensis*) are numerous in the rivers of Southern India, affecting the rocky parts. They run to about six or seven inches, but are as quick and game as any beck trout, and call for as good fishing. Any small fly will take them. Their brilliant colours defy the painter.

In the larger rivers of Southern India the carnatic carp (*Barbus carnaticus*) deserves honourable mention, for is he not a fly taker, ordinarily from one or two to seven pounds, and recorded up to twenty-five pounds? He swims in shoals, like dace, needs as quick striking as they do, and makes a stern fight on a fourteen-foot or even a sixteen-foot rod. Frequenting the same rivers as mahseer, he favours the quieter parts of them, the eddies and slower deep waters, where he is best taken from a coracle or other boat. When into one, back away into mid-stream, so as to take him away from disturbing the shoal, or he will blab, and warn them off. Then revisit the shoal, and take another. A black fly, or a gaudy one of peacock harl and feather on a No. 6 Limerick hook with a fourteen-foot rod, and fishing from a coracle, will give you "right royal sport," as a friend described it.

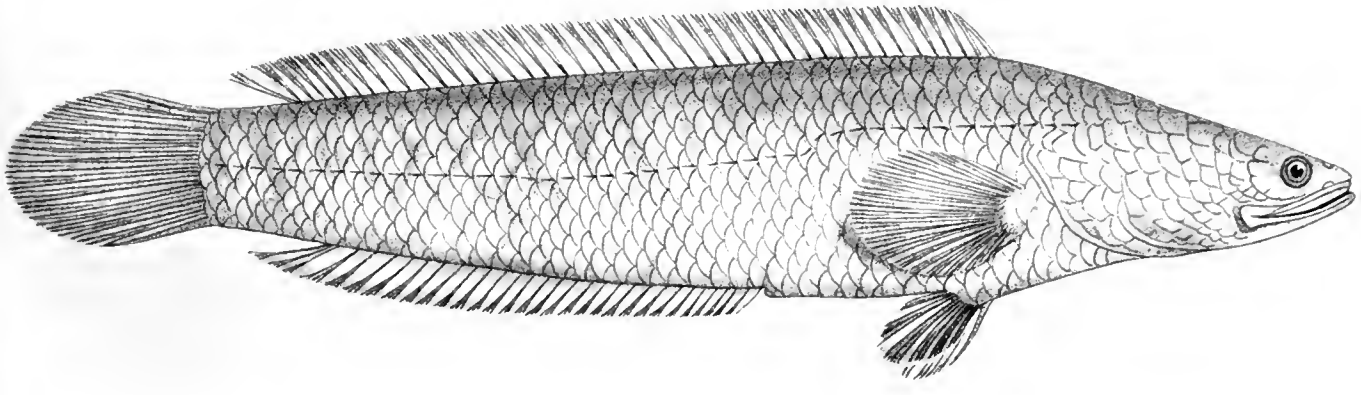
In the smaller slower weedy streams of Canara, and probably elsewhere, will be found *Barbus filamentosus*, and two or three other very similar fish, which call for fine fishing and quick striking with a small fly, and light trout rod. They run between a quarter and half a pound, and are not worth going far afield for, but should their stream chance to be near the reader's camp or abode, he may find them test his skill, and afford diversion, and be glad to be told of their existence, if he is anything like a certain salmon tamer who was such an enthusiast that he declared he would rather catch tadpoles than catch nothing.

THE MARRAL

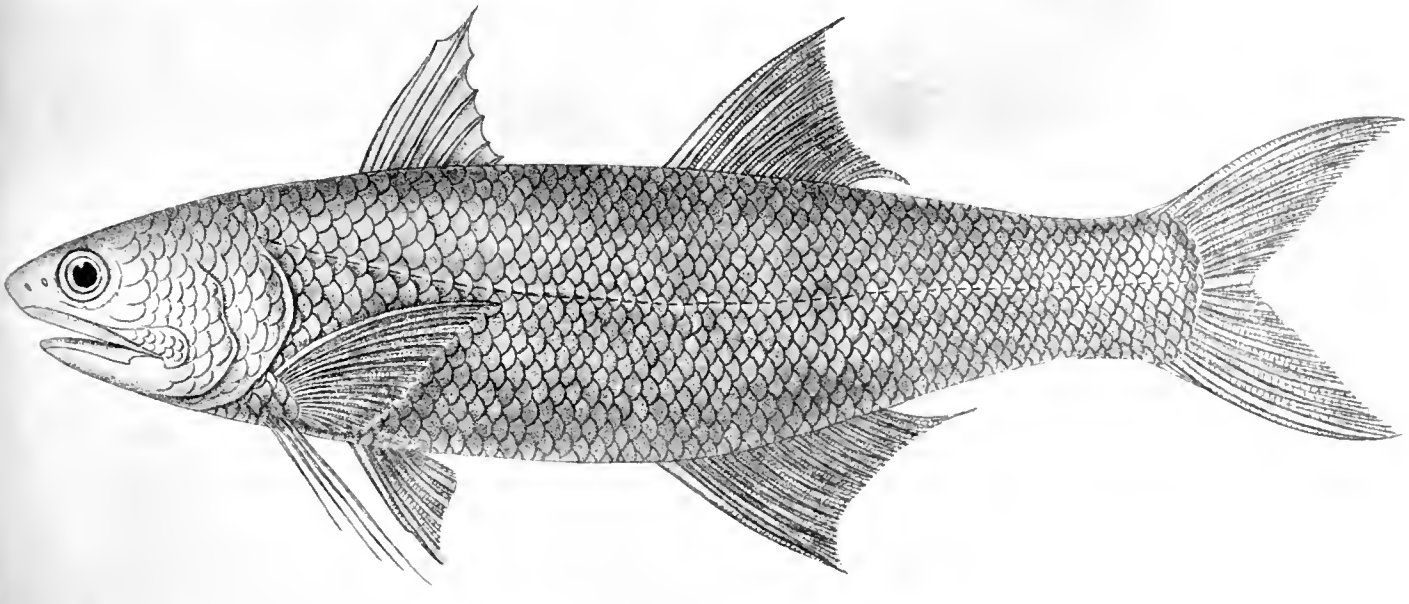
I am no great admirer of the marral or Indian pike (*Ophiocephalus marulius*, *O. striatus*, *O. leucopunctatus*), considering that he shows but indifferent sport; still, he may not be left unmentioned, because he has his votaries, and is ubiquitous, to some extent because he can travel on land in heavy rain or overflow, but chiefly because natives, especially



THE COCKUP OR NAIR FISH (*Lates calcarifer*). Page 284.



THE MARRAL (*Ophiocephalus striatus*). Page 282.



POLYNEMUS TETRADACTYLUS. Page 284.

Mohammedans, favour his edibility, and find he bears carriage well for introduction to any pond or fort moat they like. This is because he is a breather of atmospheric air, indeed, he would soon drown if kept from the atmosphere. His food is small fish, and especially frogs. He may be taken in any pond, and in the still water of any river, with a one and a half inch spoon, or a small fish of three and a half to four and a half inches long, spun, or attached alive to a float two feet from the surface, or a frog dapping, and also with a worm. Fish near the surface with your labeo rod if you want sport; with a heavier rod he can make no fight. Use gut for preference. He will bite through it now and then, but better so than not getting offers.

A neat way of setting trimmers for this fish is to run a hook, treble for preference, through the tiniest bit of quite surface skin on the back of a frog, close up to the head, attach the hook to a strong piece of running line, pass the line over the fork of some unyielding bush overhanging the water, and lower away till the frog is in its natural position on the water, with its legs and body under water, and only just its eyes above water, and not an inch of slack. Make the line fast to something inshore that will hold. In this position the frog will be in a direct line below the cord, and will so cover and conceal it from any predatory fish, and any marral taking him will immediately be struck automatically by the bush and taut line, and will be seen splashing on the surface. You can leave the trimmers to do their own business while you are fishing elsewhere. But keep away from the place, as marral are shy. They feed best morning and evening, when they roam in search of food, chiefly frogs, for which also they hide in weeds, and holes in the bank, and under lilies. In the heat of the day they bask, and may be shot with a bullet. But take him in the head, and allow for refraction. He will sink when hit, but native fishermen dive well, and are not encumbered with clothing.

Marral run to one pound or two pounds each ordinarily, and sometimes to two or three feet long. I have taken them spinning, and a friend took thirty-two in one day weighing together 115 pounds, half of them on a one and a half inch spoon, half on a small fish.

In North Indian rivers *Bagarius Yarrellii*, called in the Punjab the goonch, runs large. One rod caught in four days fourteen of them, weighing together, 1,065 pounds, and another took one that weighed 136 pounds, was five feet eight inches long from lip to tail end, the bait having been a twelve or fourteen pound rohu.

Silundia gangetica may also be taken similarly on spoon or fish. One so taken weighed forty-two pounds.

Macrones seenghala, known in the vernacular as the tengara, takes a smaller fish, the little freshwater mullet for preference.

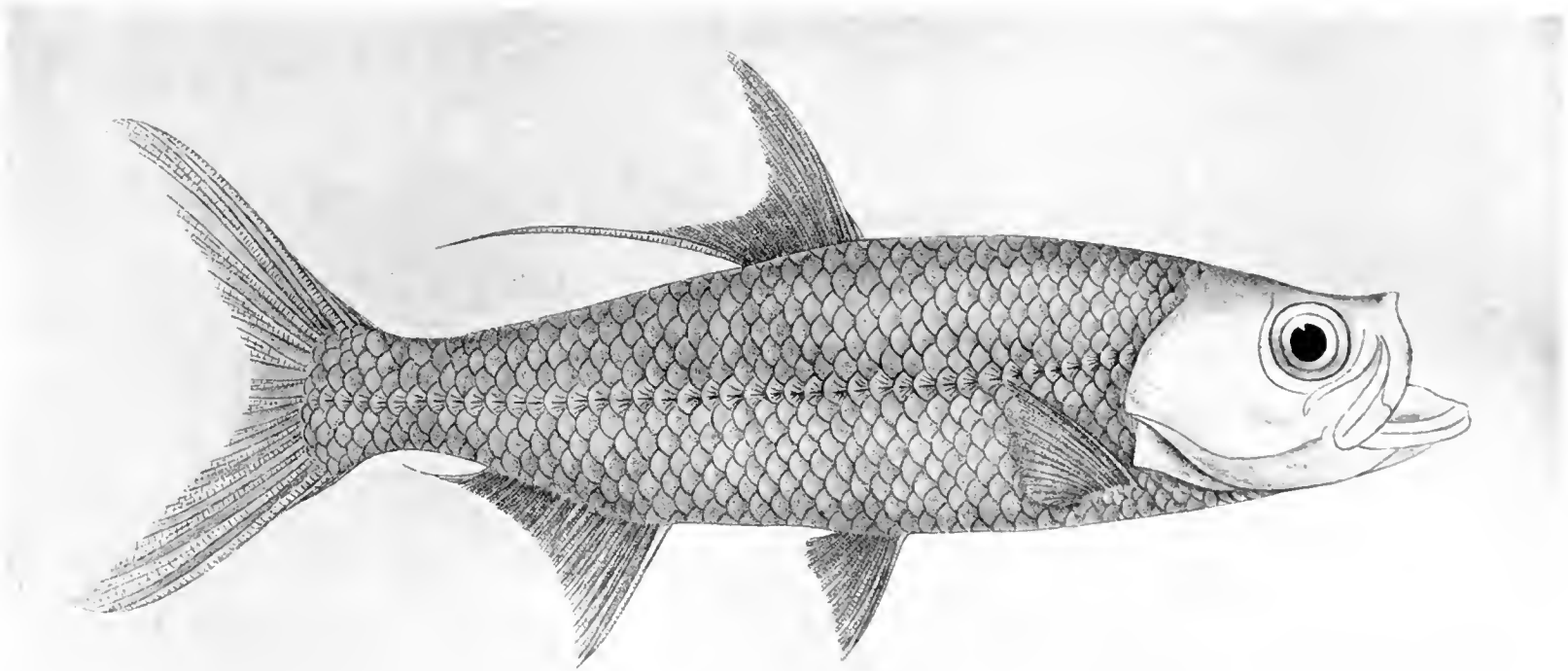
Pseudeutropius Garua, known as the batchwa, and running to one and a half pounds, takes the same fish, or one and a half inch spoon, or a lake-trout fly greedily, sometimes three at a cast.

Of smaller fish the name is legion. We will leave them to boys and girls.

ESTUARIAL FISH

These provide good fighters. *Lates calcarifer,* the cock-up or nair fish of Europeans, runs over thirty pounds, and *Polynemus tetradactylus,* averaging ten pounds, is a notorious tackle-breaker. They evidently find seabathing strengthening.

The red perch (*Lutianus roseus*) of five pounds weight, may be taken like the two previous fish, by spinning a dead fish, only the bait should be smaller. *Megalops cyprinoides,* with its big eyes, swims in shoals, and when the shoal is passing it is like pulling out mackerel, and they run about the same size, and will take a white fly or a small fish, and readily acclimatize to fresh water.



MEGALOPS CYPRINOIDES.

SEA FISHING

I. GENERAL PRINCIPLES

By F. G. ALFLALO

ANYTHING in the nature of retrospect into the past history of sea fishing as a sport would lie outside the practical scope of these pages. The vogue of rod and line for salt-water fishing must have come from Mediterranean shores, where it is general to this day, and has been so within living memory, not to mention numerous allusions in the classics. Gradually the sport, while marking time among those southern nations, has developed in Anglo-Saxon hands on both sides of the Atlantic, and the historian would have to take account of such recent landmarks as the capture of the first tarpon (*circa* 1882), of the first large Californian tuna (1898), and of the first Canadian tuna (1911), as well as the founding of the British Sea Anglers' Society (1893), and of the Tuna Club (1898), all of them interesting and significant milestones.

For present purposes, however, we are concerned rather with the sport as it is to-day, with the rod gradually supplanting the once general hand-line. I do not propose to submit any special pleading for the use of the rod. Like some other admirable reforms, its advocacy has gone altogether too far, and zealots, some of them among quite recent recruits to the ranks of sea anglers, are actually ignorant of the conditions under which the handline may be not only legitimate, but also more artistic than the rod. The skill with which Messrs E. and K. Whittall caught the largest bass in the Gulf of Ismidt on fine horsehair lines, with forty feet of single gut at the end, was quite equal to my own performances on the same grounds with a sea-trout rod, and is infinitely preferable to butchering the fish with the so-called " sea rod " in general use. The fine handlines used in Australia for catching black bream were a revelation. Mr Walter Shaw used to go whiffing for pollack single-handed, catching big fish in the heavy water off Bolt Tail, near Salcombe, and, unable to manipulate both rod and oars, used a handline, with wonderful results. For snapper fishing on the Australian coast, from a large boat drifting rapidly over reefs sunk in water that was always deep and often rough, the rod was,

as I proved to my own satisfaction, equally out of court. Similar situations, in which it is a case of the handline or nothing, will occur within the experience of most, and, since only narrow-minded sportsmen will insist on the use of the rod in the wrong place, the choice may safely be left to the reader's judgment.

All that I venture to advise, whether rod or handline be his preference, is that he should employ the finest tackle capable of beating the fish. This does not mean that he should necessarily go to the quixotic extremes of the " Three-Six " enthusiasts of Santa Catalina, who insist upon fishing for yellowtail of twenty or thirty pounds with a six-ounce rod and six-thread line. The use of such gossamer tackle is not, in the long run, even humane, since a greater proportion of hooked fish necessarily break away with part of the tackle in their jaws, and such liberty must be anything but sweet. No one need attempt to kill congers on trout tackle, or skate on horsehair, for this is freak fishing that may be left to our eccentric friends on the other side. Ordinarily speaking, the tackle should be as light as can be used with safety, always having regard for the heaviest and strongest fish that may reasonably be expected.

The object of fine tackle is not, as is sometimes stated, to give the fish a chance of breaking it, for such a concession is against the first principles of angling. No sportsman wants a fish to get away, once he has fairly hooked it, and none pretend to. What fine tackle does is to deceive the fish in clear water, in which stout gear would warn them, and it also gives the angler the greatest possible measure of sport while playing them to the gaff or net. For bass or pollack, an average sea-trout rod answers admirably, and for mackerel or grey mullet, a lighter trout rod will serve. In deeper water, up to fifty fathoms, a stouter rod may be required, and beyond that depth, or for conger (particularly in the dark), the rod may be altogether discarded in favour of the handline, which is also indispensable when mackerel fishing from a sailing boat in a stiff breeze.

The best kind of reel where, as in fishing for tarpon or tuna, special brakes and drags are not required, is of the wooden Nottingham pattern, with removable check. Such a reel, measuring about three and a half or four inches in diameter, should answer all ordinary purposes in home waters, though abnormally large wooden reels of local make are favoured by sea anglers at Scarborough, and the experts who angle for mullet at Margate prefer a reel without check action. American reels are longer in the barrel than ours, and a very beautiful little reel of mine, by Talbot of

Nevada (Mo.), which fits on a two-jointed cane rod as used at Santa Catalina, is a gem for light work. I have even used it for large bass in heavy water, but that was asking too much, and it is better suited to mackerel fishing and such-like sport. Vulcanite reels were at one time in great favour with sea anglers. I had a series of these, but soon gave them up. They were expensive and good to look at when new, but they easily smashed and were, in fact, soon superseded by the older and more durable reels of wood or brass.

All manner of lines are used in sea angling, and ordinary dressed pike or trout line, though expensive, is hard to beat. It should be remembered that salt water is much more destructive of tackle than fresh, and all lines of this kind should be dipped in fresh water each day, if possible before the salt has dried on them, and dried either in coils or on a line-drier before being wound on the reel. This may seem a counsel of perfection to some who are too lazy to act on it, but it will save the needless expense of continually replacing lines that rot before their time, and that may even break at a critical moment and lose the best fish of the year.

In the matter of gut, it is hardly necessary to use the best, except for large bass in clear water. Good single salmon gut is the proper tackle for these, and they are well worth the cost of it. For most other fish, in deeper water, strong gut of second quality should be sufficient, and I have found " Telerana " a cheap and efficient substitute.

Leads and hooks will be described in their proper place. The most ingenious leads are those used in Cornwall, when a number of lines are used out of a boat at anchor, and the two most specialized hooks are those on chain and piano wire snoods for tarpon and the Turkish *zokka* hooks soldered into kidney-shaped leads that are polished with quicksilver. The object of the *zokka* is twofold, as not only does the bright lead attract the fish, but it also prevents some, like the lufer of the Bosphorus, cutting through the gut with their sharp teeth. A two-barbed hook, designed by Mr Mitchell Henry as part of his outfit for big-game fishing, is referred to in the chapter on tuna.

As these introductory remarks deal with first principles only, it will be convenient to deal with the subject under the heads of fishing from boats, piers, rocks and open beaches. Until a future generation shall angle from dirigibles or aeroplanes, one or other of these situations is unavoidable.

I. BOAT-FISHING.—Save on dangerous coasts, where heavy surf may prevent the launching of small boats, all the best of sea fishing is, with

some few local exceptions, done from some sort of boat. Tarpon, tuna, and most other big game of the sea can be caught only in this fashion, and the largest pollack and bream are found in deep water accessible only by boat. Grey mullet, it is true, are more commonly taken from quays or bridges, but the only other fish of consequence that is rarely caught from a boat is the sargos or sheepshead, a black bream angled for, mostly at night, from the rocks of Madeira and the neighbouring islands, or from quays and wharves in seas as far apart as those of Florida and Asiatic Turkey. Sargos are very shy fish, and a boat would probably scare them.

The boat may be anchored, sailed, or rowed, according to requirements. Bass, pollack and mackerel are caught either moving or at anchor; bream, skate, conger, and flat-fish at anchor only. Tarpon can, as described later, be taken either at anchor or by trolling; tuna by the latter method only. It is just a question of the habits of each fish, and the angler who studies these and makes his plans accordingly will get infinitely more enjoyment out of his sport than if he merely did what the books tell him. He will find that some fishes, like bass and mackerel, are freebooters, chasing their prey close to the surface at times, and always on the look out for victims. Therefore they take moving baits, even if trailed after a sailing boat going quickly through the water. Quiet feeders, on the other hand, like the grey mullet and conger, suspect a bait that does not lie perfectly still, though in Portsmouth Harbour mullet can be caught from a moving boat. The huge black sea-bass of California is equally nervous of a moving bait, the hook must lie quite still on the ground.

The advantages of boat fishing are obvious; its drawbacks, hardly less so. Fishing from a boat, it is possible to reach deeper water, which usually (though not without exception) means better fishing, to find and follow the shoals of bass or mackerel or tuna, and to try another spot when the ground fish cease to bite. In short, the fisherman in his boat goes to the fish, whereas those who fish from pier or beach must wait for the fish to come to them. As regards the disadvantages, boat fishing is clearly more expensive, and it entails the undeniable risks of accident and, for some, the discomfort of sea sickness.

The size and shape of boat best suited to sea-fishing purposes is to some extent a matter of taste, and much depends on what is required of it. For sport in estuaries, or other calm and landlocked waters, an ordinary rowing boat, roomy enough to give the occupants some little freedom

of movement, is all that is required. I judge any boat suitable in which I can stand up suddenly without capsizing. A boat that will not bear this test can stay on the beach, as I would not now go out in it, though many years ago, when we perhaps valued life less than we do to-day, a friend and myself used to fish miles from land, tucked away in a little collapsible Berthon boat, which we sometimes had to carry through surf before stepping on board. On one occasion we caught a dogfish nearly as long as the boat, and were nearly swamped by it, and why, in fact, we were not both drowned has always been a mystery. After that, the most fragile craft I ever fished in was my Turkish caïque. I was just able to stand up in it, but not without driving my Greek gillie to his prayers, and the caïque was safe only because the Gulf of Ismidt, where I did nearly all my fishing, is sheltered by mountains on either shore and calm as a lagoon, and the bass kept to the shallows, so that an upset would have meant nothing beyond wet clothes. Another very flimsy skiff was that in which we used to catch tarpon at Boca Grande. In this also I hooked a shark fourteen feet long, that is to say, exactly the same length as the skiff, which towed us about for hours. Americans favour these cockleshells and even harpoon sawfish from canoes, but I am bound to confess that my own notion of an enjoyable holiday does not include the hourly risk of being upset in water alive with man-eating sharks.

Motor-boats, which have been much in evidence during the past few years, make too much disturbance in sheltered estuary fishing, but are very convenient in saving loss of time between home and the outer grounds, where, in deep water, they do not frighten the fishes.

Apart from sufficient beam to allow of standing up, the most important feature of any fishing boat is its freeboard, which should allow the angler to hold his rod just the right height above the water, neither too high nor too low. I have caught many good fish from the hurricane deck of a liner anchored in quarantine, but there was always the risk of their falling off in the air, and the great advantage which such height above the surface of the water gives to the fisherman is so serious a handicap to the fish as to spoil the sport it would give under fairer conditions. In a canoe, on the other hand, like the Berthon, the angler sits so low on the water as to have insufficient command over his rod, and in order to bring a big fish within reach of the gaff he is compelled to hold the latter over his shoulder, a risky position if the fish has strength enough to break away at the last moment. One of the smaller Cornish luggers, of the size used

by the mackerel fishermen, is the ideal craft, for the occupants can move about without any danger of capsizing, and they are just the right distance from the water for either rod or handline fishing.

Every fishing boat should have a place for everything, and everything should be kept in its place. Pieces of bait, loose hooks, and open knives should not be left on the thwarts, where anyone is liable to sit down, and fish should not be thrown anywhere in the bottom of the boat, lest someone should tread on them and fall overboard. Seeing that the professional fishermen, who are fishing against time for their living, manage to keep everything spick and span, the amateur, to whom time is no object, should certainly be able to do the same.

When fishing from boats with a handline, the hand which holds the line should be kept just *inside* the boat. In striking, the line is pulled smartly down over the gunwale, and if the fish is hooked it is hauled in rapidly hand over hand. This is the right way. The wrong way, adopted by nine amateurs out of every ten, is to sit, half-asleep, with the wrist resting on the gunwale (and in danger of being broken if a big fish should make a sudden rush), and then, after waiting just long enough to let the fish get off the hook, to haul in the line with both hands over the side.

For similar reasons, the rod (which takes the place of the wrist) should not be left on the gunwale, projecting a few inches over the water. I have known big yellowtail, out at Santa Catalina, smash two tips in one day in their last rush, merely because they succeeded in breaking the rod against the gunwale of the launch. Save when " still fishing " for tarpon or bass, as subsequently described, the rod should always be held in the hand, and anyone too tired to keep hold of his rod when trolling should fish for eels in a pond.

It is easy, with a little care, to use several lines from the same boat, whether moving or at anchor, without fear of entanglement. This is best done at anchor by using the special Cornish leads, which have to be thrown out in a peculiar manner referred to later. When out sailing for mackerel, the lines are of different length, and carry leads of various weights, the heaviest and shortest being kept forward, and the longest and lightest astern. In this way, as many as five lines can be used from an ordinary sailing boat without the least fear of one getting fouling of the rest.

Bass, pollack and mackerel rove up and down the sea's highways and byways, seeking their prey, and their whereabouts can be found only by keeping a sharp look out for seafowl sharing in the plunder, or, failing

such help, sailing or rowing over a considerable area of water and fishing it as thoroughly as one would fish a pool for trout or salmon. In the case, however, of fishes that, like cod, whiting and conger, keep to a particular ground, it is essential to know exactly where to anchor the boat. Generally speaking, it must be anchored over rocky ground for pollack, pout, bream, or conger, and on a sandy bottom for whiting, gurnard and flatfish. Much more, however, goes to the proper anchoring of the boat than such merely empirical knowledge as this, and experienced fishermen of the locality know, from certain " marks " ashore, how to anchor the boat exactly, so that, with the tide running a known strength, the lines shall so cant away from the boat's side as to put the baits on one particular spot. There is no fish in our seas in the capture of which this precision is of greater importance than in that of the whiting pout, which congregate in deep clefts in the sunken rocks, down which the baited hook must be dropped if the pout are to have any chance of taking it. This is why it often happens, when fishing for large pout on the outer grounds down in Cornwall, that one rod in the boat may be reeling in pout, two at a time, while the rest do not get a single bite. As a matter of fact, when these pout are feeding furiously, handlines are to be preferred, as the constant reeling of twenty fathoms of line is exhausting work.

Of the management of boats, sailing or otherwise, I have said, and will say, nothing. It is a separate art from that of angling, and lies outside the scope of this book. Launching small boats through surf from a flat beach, beaching them on sloping shingle, sailing them in all manner of weather, and on every type of coast, are matters of first importance in sea fishing, but proficiency is not to be learnt from print. The intelligent angler will acquire these accomplishments for himself; the wise one will take an experienced boatman with him and leave all responsibility in safe hands.

It is particularly in fishing out of a boat that ground-bait may be used with advantage. This invitation to the fish of the neighbourhood to come and feed can, it is true, be sent out from piers or rocks, but, with strangers fishing on all sides, it is as likely to benefit them as him who goes to the trouble of preparing it and, since anglers are not more unselfish than their neighbours who play bridge or golf, it is usually dispensed with for that reason. Scattered round a boat, on the other hand, it not only attracts outlying fish, but keeps those already on the ground together in the hope of further favours to come. The kind of ground-

bait to use depends on the fish in that locality, and the manner of using it to best advantage must be regulated by the nature of the bottom and strength of the tides and currents. In still water, at dead high or low tide, it need only be thrown overboard and allowed to sink slowly to the bottom, but in a strong tide or current it must be lowered in a net or other receptacle, else it will be dispersed so quickly as to entice the fish in pursuit and thereby, so far as those in the boat are concerned, do more harm than good. Pieces of fish, pounded crabs or mussels, make excellent ground bait for the majority of fishes on our coasts, but for grey mullet a ground bait of bran and barley meal is used, and for black bream there are pungent mixtures in use in both Turkey and Australia, which are described in their proper place.

* * *

II. PIER FISHING. The drawbacks of boat-fishing are the advantages of pier fishing, and vice versa. The pier, even if a slight extra charge is made to fishermen, is infinitely cheaper than continual hire of boats, and it also does away with the discomfort of sea-sickness and the risk of drowning. On the other hand, it gives the fisherman access to only a very limited area of shallow water, and if the fish do not bite, he has no chance, as he would in a boat, of seeking them elsewhere. In addition to these perfectly obvious disadvantages, which include the annoyance of summer crowds, piers have one or two other discomforts in store for the fisherman, who will find their landing stages exceedingly draughty and the gratings veritable traps for such valuables as he has the misfortune to drop.

Overcrowding is one of the worst handicaps of pier fishing. Some of the best sport to be had from piers is in the late autumn, when those on the East Coast give chances with cod and whiting, and others in the West Country offer pollack and mackerel. It is, however, in the summer holidays that all the world and its children flock to the seventy piers between Berwick and Blackpool, anxious to catch a dab or an eel, with woeful results, since there is not, on most of them, room to swing a line, and the crowd of anglers is daily augmented by ten times the number of loafers off the pleasure steamers that hourly churn the water with their paddle wheels.

A quarter of a century ago, or, better still, ten years before that, when the sport of sea fishing was followed by only a few people indifferent to the gibes of candid friends, many piers that are nowadays impossible

were delightful places to fish from. Great catches of fish were made, and a spirit of *bonhomie* prevailed that has long since been wanting. I do not want to pose as a grumbling *laudator temporis acti*, but a passing regret for the pier fishing of the eighteen-seventies and eighties, as I remember it from the days when some one held on to my small clothes to save me from a watery grave, may perhaps be permitted to one who has lived to see the old order change.

Among the game fishes to be caught on piers in the summer months are bass, pollack, mackerel and grey mullet. More, and larger, bass, in fact, are taken from piers, harbours, bridges and such-like than in boats, and the same may be said of grey mullet. Pollack and mackerel, on the other hand, are best sought out in open water; at the same time, a great many are caught from piers, and the number would be even greater if amateurs studied the conditions intelligently instead of merely copying the often unsuitable tackle and baits of their neighbours. Anglers, particularly in salt water, are slavish imitators, following their leader like sheep, and often failing for want of a little originality.

Some piers—and under the same head, since the fishing is identical, may be included harbour works, wharves, and the few bridges (as at Poole, Portland, Barmouth, etc.) which give access to salt water—are better adapted to the fisherman's requirements than others. Here and there one, like that at muddy Weston, may be too high to fish from in comfort, or, as at Exmouth, too short to reach deep water. The majority afford some sort of facilities for fishing, usually at a small extra charge, though only a very few—and among them may be named those at Brighton, Clacton, Deal, Folkestone, Herne Bay, Lowestoft, Walton, Great Yarmouth—are of any account beyond amusing schoolboys during their holidays. Fine bass are taken in summer from the piers at Clacton, Herne Bay and Walton; and those at Lowestoft and Yarmouth give cod and whiting fishing during the last quarter of the year.

Early morning and late evening are the best times for piers and harbours. Throughout the day, more particularly in the tourist season, there is too constant disturbance of the water by pleasure steamers and other craft, and at all times the fisherman is much more restricted in his methods than if he were in a boat. The rod, it is true, gives a little more choice than the handline, since it enables the angler to keep his lead off the bottom without the risk of getting his line entangled in the ironwork, but float-tackle, the most artistic that can be used from a pier, is

available only in cases where the angler can face in the same direction as the tide, so that the latter may carry his float clear of the piles. Swinging out the lead and hooks with a handline calls for delicate management on a crowded stage. The new diplomacy, of the kind favoured in the Panama Canal zone, would first hit a neighbour behind the ear with the lead, or drive a baited hook into his continuations, and then (if so disposed) offer apologies, but the amenities of English watering-places and the temper of English crowds do not favour such etiquette. Pier fishing, in fact, involves too much deference to the madding crowd for comfort, and for this reason it is less pleasant than fishing from the shore, where, whether on beach or rocks, there is room for all. Pierless spots, like Selsey or Seaton, should be better known to anglers than they are.

Spinning for bass or pollack is practised from a few piers, but this method of fishing, which requires both elbow room and water to fish in, is impossible in a crowd.

The familiar crossbar tackle, which used to be in general use in boats, but which amateurs have long since superseded with more ingenious patterns, is out of place on piers, and would ere long be entangled with the posts. A throw-out tackle of some sort is needed, and the lead may be at the end of the line, with the hooks above it (as in the well-known paternoster), or it may lie on the sand, with the line working freely in a hole through the middle of it, a saltwater version of the leger used in rivers.

The one considerable advantage of pier fishing for the stranger is the facility with which he can learn all the local conditions, as to fish, bait and tides, from either the piermaster or others fishing at the time. There is no problem of pioneer work, as is sometimes the case when fishing in unknown seas from boats or the shore. At the same time, as already suggested, originality often brings its reward, and methods in local vogue may frequently be improved upon. The piermaster need not be trusted too implicitly in the absence of corroborative evidence, as his version may be professionally optimistic, and as soon as the first dab of the season is landed on his pier he is liable to hang out a board announcing that good fishing may be had at a charge of twopence a day extra.

Piers are sufficiently crowded at any time, but during the progress of a sea-fishing competition they are pandemonium. Fortunately, much good fellowship prevails on these occasions, which are social rather than sporting. Otherwise, the crowd would be intolerable.

Sea anglers owe it to their fellow-sportsmen to make themselves as little of a public nuisance on piers as the circumstances allow. They should not swing leads and hooks with risk to other people standing round, and they should not leave bait lying about the landing stages, or, worse still, on the seats of the upper deck. People have, before now, slipped on pieces of fish left by anglers, and the herring men of Lowestoft once raised the curious, but I believe perfectly serious, objection that they were misled, when returning to port at night, by the lanterns of amateurs fishing on the harbour piers.

* * *

III. ROCK FISHING.—Something has been said incidentally of the association of some fishes, like conger, pollack, pout and bream, with a rocky bottom, and, in addition to these, summer bass and winter cod are also caught on rough ground, though less exclusive than the rest in their preference for it, and seeking their food equally on smooth sand. Rocks which lie in deep water, at some distance from the coast, can be fished only from boats anchored, or sailing, over them, but on coasts where the water is deep enough for fishing (anything over two or three fathoms) close up to the cliffs, first-rate sport is sometimes to be had by standing on the rocks and fishing the water alongside. This pastime is little indulged in on the English coast, for it is possible at only a few spots, such as Cullercoats, Scarborough and Filey on the east side, and Brixham, Dartmouth and, at intervals, round the Lizard and Land's End to the north coast of Devon, in the English and Bristol Channels. Elsewhere, with greater opportunities, rock fishing is popular, and I have tried it, not always with success, but always with interest, in Brittany and the Riviera, as well as at Madeira and Porto Santo and on the coast of New South Wales.

The attraction of rock fishing is that it gives all the freedom of a boat without its drawbacks. There is, in fact, none of the overcrowding of piers and no tossing about, as in boats. Where, as is sometimes the case, the rocks provide bait as well, a further interest is added to the sport. True, this kind of fishing entails risks of its own, but none that a little care will not overcome. The worst of them is a false step on slippery ledges, and the penalty of this ranges from the danger of being seized by sharks, the probable result of a headlong fall from the North Head, at Sydney, to the mere discomfort of wet clothes, which would be the worst consequence in our own seas to anyone able to swim. And those who cannot swim in the sea should not fish in it.

There is, in the tackle, and manner of using it, some analogy between rock fishing and pier fishing, with the difference that on the rocks the angler is obliged to alter his position according to the state of the tide, retreating as it rises and following when it ebbs. Where the rocks slope gradually to the water's edge, a longer rod is needed than in fishing from piers, as it would otherwise be impossible to keep the hooks clear. Float-tackle is the best of all, as it alone keeps the hooks off the rough bottom in which so much tackle is sacrificed. In the neighbourhood of Scarborough, however, resident anglers contrive, with the aid of immense wooden reels, to cast their flat leads a surprising distance. When reeling in, they begin by jerking the lead off the bottom and keep it on the move without giving it another chance of getting fast in the rocks, yet, for all these precautions, hundreds of leads are lost every season, and the foreshore just below low-water mark at Cloughton Wyke and Cayton Bay must be paved with them. Fortunately the special tackle sold in the town is exceedingly cheap, and, by reason of the long, flat expanse of rocks, any other method of fishing thereabouts, short of taking a boat, would be impossible. Where on the other hand, as in New South Wales, cliffs fall sheer into deep water, a handline is better than any rod, for the latter would add to the risk of overbalancing on some of those narrow ledges, and heavy fish, like grouper, are best hauled hand over hand.

The aforementioned spots on our East Coast, south of the Tweed, where rock fishing is to be had, differ in several respects. At Cullercoats, a sea-side suburb of Newcastle, the falling tide uncovers a large area of more or less flat rocks, from which codling can be caught, the angler beginning at low water and retiring towards shore as the sea comes in. North and south of Scarborough, the coast is much bolder, and cod of larger size, as well as coalfish, are taken from September down to Christmas, the bait in common use being the scallop, known locally as "quean-oyster." Filey Brigg offers better fishing still, as billet (i.e., coalfish), mackerel and cod feed close up to this remarkable natural pier, and are caught on the rod, not only with natural bait, but also by casting into the surf with enormous artificial "flies," some of which are more like young Birds of Paradise than any known insect. Why these fish accept at Filey crude imitations that they would reject anywhere else is a mystery. There is also some rock fishing at Flamborough Head.

The rock-fishing in the West Country, beginning just west of Berry Head, is somewhat different, the chief prizes being bass during the daytime

ON THE YORKSHIRE COAST.

and conger at night, though at Brixham and Dartmouth large wrasse, gaudy but useless, save as baits for the crabpots, frequently take the bait, a live prawn. Some of the best rocks between Brixham and Dartmouth lie out in open water, and I have, on breezy days, found some little management necessary in stepping out of a small boat alongside. The boat should then lie off, keeping within hail, but out of the way. There are many other rocky points, from Plymouth round the Land's End to North Devon, from which bass may be taken, the usual bait in Cornwall being a pilchard.

The nearest rock fishing in which I have taken part on the Continent is in Brittany. There is a little to be had, for bass and grey mullet, even at St Malo, but better opportunities may be enjoyed round the west side in the vicinity of Port Manech, the annexe to the famous Hotel Julia at Pont Aven. Here are ideal little coves into which the summer tides bring large mullet, and, with a little ground-bait and much patience, these may be caught from the rocks. Native anglers are few and far between, and few of the tourists, who are for the most part French, give any attention to sea fishing other than going out in boats for mackerel or whiting pout, so that the sea angler should be able to get a cove to himself, keeping it well baited during his stay. Elsewhere in France, the best chances of rock fishing are at Biarritz and along the French Riviera, notably on the rocks just beyond the well-known Restaurant de la Reserve, at Cannes, where I have seen one or two fair-sized bass taken with a *machotte*, or mud-prawn, for bait.

At Madeira and the neighbouring island of Porto Santo we used to catch very game black bream, or sargos, from the rocks, baiting with crabs. The crabs at Porto Santo, where I once camped for some days in a tent on the beach, grew so knowing that towards the end of my stay the only way to get them was by shooting each with a small-bore rifle! This reads like an American version of the truth, but it is the truth itself. The bream were attracted by a groundbait of pounded crab (only the legs were used on the hook) and sweet potato, which a Portuguese fisherman used to chew and spit with great accuracy round the line. Like their cousins in Australia, these sargos bite very gingerly, and it is easy to miss them on striking, but when hooked they fight well on the cane rod and tight line with which it is usual to fish for them. Wrasse are also plentiful off those islands, some of large size, and they are as frequent a disappointment when angling for sargos as they are to the bass fisherman at home in Devonshire. The most uncanny rock-fish in all my experience is the

moray, or muræna, a cousin of the conger, common throughout the Mediterranean and in most warm seas. Though to all appearance no more than a mottled sea-eel, the muræna is as vicious as a rattlesnake, and I have even seen one, that had been flung on the dry rock, turn some moments later and snap at a passing ankle. The last murænas that I saw were in the admirable aquarium (one of the best in Europe, and immeasurably superior to anything in this country) in the Avenue Louise, Brussels, and, true to their nature, they snapped angrily at the glass as soon as a finger was laid against it.

Now, what I am about to relate may, once again, tax the belief of the reader, but I can only pledge my word to the truth of it. The fishermen of Madeira exorcise the hiding moray, or moreia, with song, and it is a fact that the dirge seems, as I have repeatedly seen for myself, to entice the eel forth from its hiding-place. There are two forms of moreia, one (moreia do rolo) a slaty grey all over, and the other (moreia pintada), a " painted " eel, yellow with black mottling. The first is adjured to bite the dust; the second to have a good time. It is a curious and unexplained fact that three of these eels are usually found in company, though whether these are all of one sex, or whether a polygamous male and his harem, I know not. Anyhow, the third, and last, verse of the incantation bids each of the three die in its own fashion. And here, in the Portuguese of the island, are the words:

Moreia do rolo
Vem a terra
Comer polvo.

Moreia pintada
Vem a terra
Regalada.

Moreias todos trez
Cader qual
Per sua vez.

Quo, Moreia, quo!

Chanting these words again and again through his nose, and whistling softly after each verse, the native fisherman stoops over a likely pool into which the Atlantic is breaking. It is not only the song which attracts the reluctant moreia, for, while singing his invitation, the fisherman dips

ON THE RIVIERA.

in the pool a slab of tunny in such a state of decay that its bouquet must reach every moreia in the archipelago. Suddenly you see the man stiffen as he spies the snakelike form of his victim glide from some cranny, but he goes on singing and whistling as if he had seen nothing. Next, he catches it in one of three ways: on a baited hook attached to a short rod; in a pair of wooden tongs, which grip its slippery body fast; or in a curious trap consisting of a hollow cane in which a running noose works. This would be a difficult instrument for catching any other kind of fish, but, hypnotized by the wailing, or attracted by the tunny, the moreia usually falls an easy victim, and, as soon as it is safe on the rock, the fisherman makes short work of it, beating it to a pulp. The muræna is a dreadful creature, and one can watch its last moments unmoved.

Rock-fishing, as practised in Australia, is an altogether more robust sport than in Europe. Residents, used to such exercise, nimbly trip from one rock to another, groping their way along narrow, beetling ledges a hundred feet above the water, which is deep, rough, and alive with sharks. On the lower levels, it is possible to use a rod, and, baiting with cungevoi, a mollusc found below high-water mark, to catch grouper, wirrah, toadfish, leatherjacket, and traglin, all of them ugly animals, with the exception of the last. The blue grouper, the chief object of these breakneck expeditions, resembles a great wrasse, and the toadfish has an ingratiating habit of swelling like a football, and is, by way of added attraction, poisonous to eat. Fishing from the upper ledges, a handline is essential, and even so the risks are considerable, as encouragingly celebrated in the names of some of the favourite stations, known as " Brown's Folly " or " Smith's Mistake."

* * *

IV. BEACH-FISHING. Partly, no doubt, owing to the rival attractions of boats and piers, but also to ignorance of the fact that bass and cod, among other fishes, feed right in the waves, close to the beach, this style of fishing is less known than it deserves, and many opportunities of enjoying it are neglected. Only at a very few spots, indeed, like Aldeburgh, Budleigh Salterton (with its near neighbours, Sidmouth and Seaton), Folkestone, Hastings, Selsey and Yarmouth (with Lowestoft and some neighbouring resorts), is fishing from the beach a recognized sport.

Beaches in this country are either sandy, with a very gradual decline to the water's edge, or of shingle, with a steeper gradient. A rod is easier to use from a shingle beach, therefore, and handlines from the flatter

sand, but, as the shingle usually ends in sand somewhere above low-water mark, the fish to be caught (mostly bass in summer, and cod and whiting in winter), are the same, though a much greater variety of game fish is, as described in a later chapter, caught from beaches in America and Australia.

Here and there, even where he has access to a pier, the bass fisherman who chooses the beach is liable to be rewarded, and a new bait, as a change from that in local use, may still further improve his chances of sport. I remember, as a case in point, an angler, who fished from the beach at Littlehampton, baiting his hooks with lugworm, and who caught a score of good bass, while those who used the conventional ragworm and green crab from the piers and quays met with no success at all. Bass are caught in the same fashion, but with herring or mackerel for bait, on summer evenings on the shingle beaches of Folkestone and Hastings and, farther west, at Sidmouth, Seaton and Budleigh Salterton. The three Devon watering-places in fact do not offer the alternative of piers.

East Coast beach fishing, in the fall of the year, is all for cod and whiting. The bait is lugworm or mussel, or even sprat. Mussel bait, at any rate, is best tied to the hook with a little wool, as it is apt to be flung off when throwing out the line. This is accomplished with the aid of a button near the end of it, which just catches in a cleft ash stick, and with this contrivance an expert can make astonishing casts.

The beach-fisherman has one advantage at least over those who fish from rocks or piers, and that is the ease with which even the largest fish can be landed. This will be appreciated by those who, in the absence of gaff or landing net, have hauled salmon, pike, or large trout high and dry in grassy bays.

In concluding this introductory chapter, a few remarks may perhaps be offered on the unwritten code which, jealous for the reputation of their sport, sea anglers should in some measure honour. It is a good thing to be a good fisherman, but it is a better to be a good sportsman, and the best sportsman does not always catch the most fish. The best sportsman, in fact, does not always want to.

The fisherman should always behave to his fellows with courtesy and consideration. He should impart information freely; give a lead or a hook, or a little bait, if he can spare it. If he cannot, he should not be blamed for refusing, but he can at least do so apologetically. He should not be jealous. He must know himself a mighty poor fisherman if he is afraid

SPANIARDS FISHING AT TANGIER.

to let others have a chance. Those who fish for a living, of course, are bound to guard the secrets of their trade, and there is nothing more amusing than to watch the elaborate manœuvres with which fishermen in Cornwall will conceal their own particular fishing "marks" from rivals. No sooner does another boat come within a mile than up comes the anchor and the lugger sails round and round the proper spot until the inquisitive one has retired. This is diverting in a professional, but it would be disgusting in an amateur. Such petty rivalries may be almost excusable in the limited conditions of river fishing, but in the sea there is so much room for all that there is no ground for them.

The fisherman should also be considerate in his treatment of his boatman or gillie. If he is not so, for the sake of decency, let his own advantage dictate forbearance. Getting the utmost out of those that serve you is a rare secret, but it is not confined to the Bonapartes. Many of these gillies have an independent spirit, which makes them far more agreeable company than if they were flunkeys. Some of the Cornishmen are as free from servility as Highland gillies. They can be coaxed, but will not be driven. Nor must they be urged to break the Sabbath. Sunday fishing is the custom in the sea shires nearer London, but it is taboo between Plymouth and the Land's End, and the prejudice against it, however irritating to those of broad views and limited holiday, should be respected. In the Near, Middle and Far East, fishing attendants should be treated like good children, and anyone taking that view of them may do anything he pleases, getting twice the work out of them that they would do if bullied. Perhaps the high-water mark of independence is reached in the United States, particularly on the east side, as far down as Florida. The wise Englishman will treat his guide (who, if owner of a motor-boat, is engineer as well) as an equal, giving him an occasional cigar, and sharing the same lunch. Tipping should be done in private. I only met one American of humble station who actually declined a private tip, and that was a chauffeur on the Panama Canal works, but many, not averse from taking it on the quiet, would indignantly reject it if offered in public.

Without any of the false sentiment which comes so ill from those who fish or shoot, I do not hesitate to urge humane treatment of fish once they have fought their fight. So long as they are good to eat, man has a right to kill, but none to torture, them. Let each be knocked on the head and done with it. This not only puts the fish out of its misery, but also prevents it from deteriorating in its death struggles. Tarpon, which are

not to be eaten by any epicure more fastidious than a turkey-buzzard, should not be killed. They may, if necessary, be measured alive and then given their liberty, at any rate after one or two have been retained as trophies. Nor should the sportsman kill undersized fish of any kind, unless, like dogfish, weevers and some others, they are noxious vermin. The myriads of undersized flatfish killed by amateurs are a disgrace to sport, and it is even worse to keep undersized bass, mullet and pollack, since these fish give such splendid sport when full grown. La Fontaine may have been a fine writer, but he was a woundy poor sportsman, else he could never have written that miserable fable of his on the " Fisherman and the Little Fish," in which the latter stoutly declines to return an undersized fish to the water, to grow bigger, on the ground that—

Mais le lâcher en attendant,
Je tiens pour moi que c'est folie;
Car de le rattraper il n'est pas trop certain.

Such doctrine is poisonous.

II. THE TARPON

By F. G. AFLALO

IN some respects tarpon fishing is the most fascinating form of sea angling, but as it is a somewhat lengthy and expensive undertaking it will perhaps be as well to open this description of it by answering the two questions invariably put to those who return from Florida by others minded to follow in their steps: What does it cost ? How long does it take ? It is quite obvious that to sportsmen living in England, and therefore a fortnight's journey from the nearest tarpon grounds, these considerations of time and money (even in cases where time is *not* money) are of first importance, and the answer depends upon the locality chosen. If the tourist should prefer to try his luck in the West India Islands, where, as will be shown later, he has every chance of catching good fish, his expedition will cost considerably less than if he were to visit the classic tarpon grounds of Florida. Yet, although I am a strong advocate of spending English money in English possessions, I fancy that, with the opportunity of only a single trip, he would do well to choose Florida, or Mexico, for in the Gulf of Mexico sport is a certainty, whereas in the Caribbean it is a venture. For the matter of that, tarpon may be caught on the West Coast of Africa, and one weighing 107 lb. was not long ago caught at Lagos. As regards time, an allowance of six weeks should enable the angler to spend a fortnight on the spot, and this should be the irreducible minimum in view, for the Gulf of Mexico is subject to changing moods, and there will surely be one or two days in each week on which fishing in the Pass is an impossibility. Where the tarpon are killed in rivers, mainly by what will presently be described as " still fishing," these interruptions need not be taken so seriously as in the open water. Personally, I spent sixteen days at Useppa and was out on the Pass on eleven of them, killing seventeen tarpon in all, including five of over 100 lb., and that should be sufficient for ordinary ambitions.

The cost of such a trip is less easily estimated, so widely do individual ideas differ as to what constitutes comfort on a holiday. By cutting expenses to their finest, travelling second class by rail and steamer and drinking water (with an excellent chance of typhoid thrown in), a man might do the trip on £80 in addition to his tackle, which inevitably represents another £20, but a more reasonable allowance of £150 should allow of first-class

travel and moderate indulgence in mineral waters. Such teetotalism is encouraged by the price and quality of the spirits served at the ordinary fishing inn in the United States, and even mineral waters amount to an item that will make the economist wince. The cost of such an expedition falls under three heads. There is, as already mentioned, an item of £20 for tackle. First-class travel out and back, via New York, would amount to about £75, including the cost of meals on the trains. Thirdly, we have hotel accommodation and the fishing itself, and these together total, roughly, to 32s. 6d. a day. There remains only a small sum for tipping the guide and hotel servants. No allowance was made in the total estimate of £150 for the cost of having one or more tarpon set up as trophies and sent home to England. Taxidermists on the spot charge about £1 a foot for preserving the fish, but the cost of packing and freight is considerable, and by the time I had got a couple sent after me, they left very little change out of £20. This seems a heavy price to pay for such souvenirs, but, on the other hand, the pleasure of having these reminders, now that the fighting days are over, is incalculable.

The allowance of £20 for tackle for only a fortnight's fishing may also seem excessive; but, as the accompanying details will show, it is practically irreducible. Most of the tackle hitherto in use is made by Vom Hofe, of New York, and I personally went to his store in Fulton Street to get my outfit on the spot. Since those days, however, Messrs Farlow, of Charles Street, Haymarket, have fortunately taken up an agency for all Vom Hofe's specialities, besides selling many of their own, which is, in particular, a convenience for those sportsmen who elect to fish in Trinidad or Jamaica, and who therefore have no need to travel via New York, but can take the Royal Mail Steam Packet boat direct from Southampton. The tarpon outfit is as follows:

	£	s.	d.
Rod (with spare top)	5	0	0
Reel	9	0	0
Lines (three at 12s. 6d.)	1	17	6
Hooks (1½ dozen)	1	2	6
Gaff		18	9
Rod Rest for boat		10	6
Sinkers		10	0
	£18	19	3

As has been said, this seems a heavy tax for so short a period. In the first

place, however, tarpon fishing is royal sport of its kind, and no one should expect to kill such an adversary on cheap tackle. In the second place, the rod and reel should be little the worse for their work, and one at least of the lines should be unused at the end of the fortnight, and for all these, with the gaff and boat-rest, there should be little difficulty in finding a purchaser at half their original cost. Those who go after tarpon for the first time will doubtless prefer, as I did, to take everything spick and span, but since that experience I would just as soon go out again with a properly tested second-hand outfit.

This tackle must now be described in some detail, as well as the bait used in different localities, after which some account will be given of the two styles of tarpon fishing most in vogue, with some other considerations of interest or importance to the fisherman.

Strength is the first essential of tarpon tackle. How could it be otherwise, seeing that it has to control a fish that may exceed a length of eighty inches and a weight of two hundred pounds, a fish, moreover, that leaps with the agility of a trout and dives and turns as swiftly as a mackerel, tearing line off the reel at the pace of a torpedo and putting a greater strain on every foot of the line and every bolt of the reel than, with possibly two exceptions, any other fish caught in this manner ? Yet, though tarpon tackle should be capable of doing what is required of it, there is no need to use material that is practically unbreakable, and it is more than gratifying to find that my dislike of the heavy tackle in use six or seven years ago, for my criticisms of which many prominent American sportsmen blamed me at the time, has since been shared by many on the other side, and that an American has, in fact, popularized light tackle for these fish, the very reform for which I pleaded on my return from Florida. Truly, time brings its revenges to those who can wait! Those, on the other hand, whose time is limited, and who may never enjoy an opportunity of returning to the fray, may entertain a legitimate preference for the old-fashioned tackle, which, particularly in hands unaccustomed to such sport, is more likely to ensure catching the fish. In describing this heavy gear, it is merely necessary to add that the lighter tackle, introduced from Catalina, is just a more delicate edition, involving the same mechanical principles on a slighter scale.

The only peculiarity about the two-jointed rod in English eyes will be the shortness of the butt and the greater length of the " tip," a fashion with American rods generally. I am not indeed sure that the combination does not give better play and balance than the two equal joints of our own rods,

but this is perhaps a matter of taste. The American rod is made of a hard wood, not unlike our greenheart, but distinct, and is seven feet long, the "tip" five and the butt two. The grip of the butt, bound with cane, is admirable, and the large rings allow the line to run with a minimum of friction. There are rings along both edges, so that the position of the rod can be reversed, so as to equalize the strain on different days. A great improvement in the shape of removable rings, or "guides," devised by Mr Mitchell-Henry, is described under Tuna Fishing.

The reel is a more important and also more highly specialized article, as well it may be in view of its cost. Like all first-class American reels, it gets much into little space, for, though no more than four inches in diameter, it easily takes 200 yards of stout line. The brakes, drags and multiplying gear can only be described as stupendous. No lesser word is applicable to such machinery. The old form of reel included a pad of raw hide which can be pressed against the line so as to retard the revolutions of the reel, and this is, I think, the fly in the ointment, since it not only frays the line, but is liable to be torn or burnt through. If this accident were to happen with a tarpon in its first flight, the fisherman's thumb, which presses the pad against the line on the barrel, would certainly be cut to the bone and might conceivably be so injured as to necessitate amputation.

This is, perhaps, stating an extreme case, but I always used that leather drag in fear and trembling and should have been glad to see it done away with altogether. Yet Americans are much attached to this form of brake, and even with the lighter reels used at Catalina it is usual to wear a thumb-stall, which is pressed against the line in the same fashion, whereas it might quite as effectually be applied to the rim of a reel so constructed as to respond to such a check on its movements.

The line ordinarily used for catching tarpon is, even with the heavier tackle, little stronger than that used for salmon at home. It is of undressed twist, as Americans do not, even in freshwater fishing, favour waterproofed lines. A good line is *very* good, but buying lines is always something of a lottery, and those sold for tarpon fishing vary even more than most. On two of mine I killed over a thousand pounds' weight of tarpon in nine outings, but the third broke twice on its second day out, and with comparatively small fish, and this after having been in use for a few hours only, during which it only accounted for three of the smallest tarpon of all my catch. While, therefore, a good line is well worth the price of a penny a yard charged for it, a bad one comes

exceedingly expensive, to say nothing of the chagrin of losing what might perhaps have been the fish of the year.

The hook is tinned. Like most tinned hooks, it is often blunt and should always be filed before use. It is attached by some fifteen links of fine chain to a 6-foot leader of piano wire, with a swivel at the top end for the reel line. The long wire leader saves the line from fraying against the sharp fin on the tarpon's back when the fish is dashing backwards and forwards just before coming to the gaff. It is admirable, save when a shark takes the bait. Then, and then only, the angler regrets its strength, since, if it were more fragile, the shark would bite through it and go free, leaving the line intact, whereas, being unable to bite or break the wire, it takes out most of the line, leaving the fisherman with the dismal alternative of cutting loose and fitting up a new line, or being towed about for hours while those in the other boats are catching tarpon. The object of the chain is to prevent the wire kinking whenever the tarpon jumps into the air, and its flexibility probably saves many a smash. This is the tackle used in trolling. In still-fishing, which will be described later, there is neither wire nor chain. The hook is attached instead to a shorter length of raw cowhide. In this method of fishing, the tarpon takes the bait deep down in its inside and has far less chance of getting rid of the hook, though I am assured that it fights more fiercely.

The leads, or sinkers, weigh either a quarter or half a pound and are sold in boxes at half a dollar. There used to be—for aught I know, there still is—a way of attaching the sinker to the swivel of the wire leader with very fragile copper wire. The object of this was that the first leap of the tarpon might jerk the sinker free. This, needless to say, meant a new lead after each fish was hooked, and so one got through a large number in a week's fishing. It was, in fact, no unusual experience to use a box daily. I was, so far as I know, the second fisherman at Boca Grande to attach the sinker by stout line, so that one served me a whole week. The first (from whom I borrowed the idea) was none other than the genial Mr Vom Hofe himself! When one comes to think of it there was something ludicrous in the acceptance of the theory that four ounces of lead could add anything appreciable to the fighting weight of a fish weighing a hundred pounds. Anglers, however, are more often imitative than original, hence, no doubt, the long vogue enjoyed by this curious belief, which profited no one more than the man who sold the sinkers.

The gaff is just a steel hook securely fastened to a 6-foot ash handle. It

is not possible for the tarpon-fisherman to gaff his own fish in the majority of cases, and this critical operation must therefore be entrusted to the guide. The ideal guide would exercise invariable skill in gaffing the tarpon at just the right moment, whether in shallow or deep water. The guide in fact exercises very little skill, as a rule, bungling fish after fish, though at times doing the most extraordinary feats and saving fish that have already been given up for lost.

One item of the outfit, which I have left for the last, is distinct from anything used by fishermen outside of America, but it is considered indispensable in big-game fishing on both sides of the Continent, and rightly so. I refer to the leather rod-rest, without the aid of which not one tarpon in a hundred would ever be brought to the gaff. It is in the form of a cup and is screwed to the seat between the angler's knees. In it he slips the butt end of the rod the moment a fish is hooked, and this adjustment alone gives the requisite leverage when " pumping " the fish to the boat. Of the similar attachment used in the form of a belt I cannot write with the same enthusiasm. It is an inconvenient apparatus and throws an excessive strain on the stomach. It is not intended for use in the boat, but is rather for the angler who prefers to go ashore at the first opportunity and play his fish from the beach. In the ordinary way I am sensible of the pleasure of playing any fish, from a trout to a salmon, from the bank, but when the fish is equal to ten salmon rolled into one, and the bank is a slippery, sloping beach of broken shells, I prefer to stay in the boat. However, there it is, and he who fancies wearing the belt and playing the tarpon with the butt of the rod reposing in the pit of his stomach is free to do so.

As regards bait, that used in the Passes of Boca Grande and Captiva, another favourite tarpon ground, also in Florida, consists of six inches of mullet. This seems a clumsy lure, but the tarpon have not yet been educated to mistrust of it. In open water in Texas (as in still fishing in Florida) anglers use a whole small mullet, but in trolling in the Passes the strip—four can be cut from each mullet—is simply allowed to hang from the bend of the hook, like a mackerel " float " at home, and without any attempt at concealment. The day will come, no doubt, when tarpon are fewer and more suspicious. So far, however, they show no fear of the gifts of the Greeks, but take what is offered in the right spirit. As each day's fishing requires half a dozen mullet at fivepence apiece it will be seen that the cost of bait is an appreciable item, but the foregoing estimate of 32s. 6d.

per diem for expenses on the spot includes this outlay. There is never, so far as I know, any shortage of bait. The mullet are caught at night by Spanish or half-caste fishermen, and the guides cut them up on the way to the fishing grounds. There is no urgent need for the bait to be absolutely fresh, only it is in that condition undeniably more agreeable at close quarters during hot weather. As for the tarpon, they have no objection to stale bait when they can get no other, but if one boat is using fresh bait the others will have no success with stale. No other bait appears to answer in Florida. An American, whom I met there, used to try garfish, but it failed utterly. In Jamaica, on the other hand, tarpon take either prawn or the small fish known locally as " whitebait."

STYLES OF FISHING

I. TROLLING

Unless one goes in for harpooning tarpon in the manner described by Messrs A. W. and Julian Dimock in " Florida Enchantments "—surely the most delightful book ever written about open-air life in Florida—trolling in the Passes is the most sportsmanlike way of catching these fish. The open water, on the threshold of the Gulf, is far more exhilarating than the sluggish river in which still-fishing has its chief vogue, and the tarpon, being hooked in the edge of the mouth, both jumps more freely and enjoys a better chance of throwing out a hook, an opportunity which, however disappointing it may prove to the angler, should be allowed to every fish caught on rod and line, particularly in cases where, as in this one, the fish gets rid of the hook in the act of regaining its liberty. As a matter of fact, tarpon-fishermen, in both Florida and Mexico, are more and more favouring the generous policy of sparing the tarpon to fight again another day, a rational issue to the game which should have been general long since. I always, even while doing as others did, regretted those uselessly slaughtered tarpon drawn up on the sloping beach of Boca Grande and, later in the day, weighed on the sometimes flattering steelyard at Useppa. That steelyard may have been a mere machine, but it was full of guile. Sometimes it would register less, sometimes more, than the actual weight of a fish. It had its prejudices and favoured one angler at the expense of the rest. Anyhow, it is easy, with a little more loss of time, to play the fish to the side of the boat in a condition so near exhaustion as to permit of the hook being removed with little injury to

the victim and then to set it free to recover its breath. There is, no doubt, the risk of an untimely shark giving it premature burial before it has got its wind, but this risk is preferable at any rate to certain death on shore. The tarpon would say so, anyway, if its opinion could be canvassed.

The method of trolling is perfectly simple. The tackle and bait have already been described. When the hook is baited and the skiff is in the tideway, the angler, seated in an armchair, with his back to the guide and with his feet planted squarely against a sandbag, which gives him firm purchase when fighting his fish, the brakes are taken off the reel and the lead is allowed to run down through thirty-eight feet of water, which (allowing for the length of the leader, etc.) puts the bait about forty-five feet deep. The requisite amount of line to let run off the reel is indicated by a mark. Then all the brakes are put on, a turn of the line is taken round the butt and held in place with the thumb of the left hand, while that of the right presses the aforementioned leather pad against the line on the barrel of the reel. While waiting for a bite, the angler holds the tip of the rod out over the gunwale of the skiff, not straight over the stern, but either to right or to left of him, so that the guide can watch it, for his skilled eye reads from its behaviour the movements of the fish below. A sudden slight twitch, no more than at home would betoken a mackerel, is followed by another, and now is the moment to strike the hook home, jerking up the rod again and again till the reel goes flying round, for all its brakes, and a maddened tarpon, one splendid bar of silver sheen, flies high in the air perhaps a hundred yards distant and falls back on the water with a splash that would be heard a mile off. The leap of a tarpon is like nothing else in the angler's world-wide experience. He may have seen salmon and trout leap, but theirs is poor frolic beside the magnificent display of a tarpon fighting for its liberty. Meanwhile the angler has slipped the butt end of the rod inside the leather rest on the seat and at the first check he begins to reel in line, raising and lowering the rod as if it were the handle of a pump, a lever to which the leather rest acts as fulcrum. Each time the rod top is lowered the slack line is reeled in, though the second charge of the desperate fish is often more effectual than even the first, and it takes matters its own way, carrying out more line than ever. Up in the air it goes again, perhaps two or three times more. Then may come the most critical moment of all, when the great fish doubles on its tracks and comes straight for the boat, faster than the angler can wind in the line, and even passes under the keel, much as a mackerel would. The man

at the oars has not meanwhile been idle. To be quite frank, his management of the boat is as necessary to success as the other's handling of his rod, and without his skilled and intelligent co-operation in a game that has no written rules, but that calls for resource in emergency as every fresh difficulty arises, success would not be possible. True, the guide's one object, in Pass fishing at any rate, is to manœuvre his skiff to the beach. This must, however, be done with tact and judgment, allowing for the sudden rush that gives no warning, or for the equally unexpected intervention of a shark, no unusual visitor in those waters. The guide must, in short, have a very intimate and varied experience of the way in which tarpon behave, when hooked, under all manner of circumstances. One moment he must row ahead like one possessed, the next he may have to rest on his oars or even to back water. Then, when the boat is in the shallows and the fish nearly beat, he must leap out, gaff in hand (if the barbarous mode of gaffing is favoured), and be ready to snatch the fish as it goes past him and to haul it high and dry. This part of his duties the average guide performs with least satisfaction, making futile stabs that merely frighten the fish and inspire still more desperate efforts at escape. Yet it should be remembered that the man's task is none of the easiest, since, apart from error on the part of the man behind the rod, he has to deal with an enormous and surprisingly active fish. It will be welcome news when we hear that the gaffing of tarpon has been given up altogether. All the fun goes out of the game once the splendid fish is at the end of its tether, and there must be far greater satisfaction in being generous to such an adversary and letting it live. I may, perhaps, be called a reformed rake in tendering such counsel, but it should in fairness be allowed that, at the time when I fished for tarpon at Boca Grande, no one had dreamt of such clemency, and it was not, indeed, until looking back on the carnage, long after the excitement had subsided, that the alternative occurred to me, to be still further commended by the experiences of Mr Dimock and his son, whose bloodless sport with tarpon is so artistically recorded with pen and camera.

Strange things happen in the Pass. One afternoon I hooked what seemed from its weight to be an immense tarpon. As I had already a fish of 140 pounds on the beach since lunch, a second prize the same day seemed too much to expect but the strength with which the unseen fought left no room for doubt. The end came suddenly, and the monster gave up the fight and allowed itself to be reeled in without offering further resistance.

Then the murder was out, for the fish revealed itself as, with one exception, the smallest in all my catch, a little fellow of not more than thirty or forty pounds. It is common knowledge with fishermen that a small fish hooked close to the tail can give as good an account of itself as one three times the size hooked fairly in the mouth. This little tarpon was still better off, since it was not hooked at all, but, in some incredible fashion, the wire leader had made a noose round its tail, the point of the hook having caught fast in one of the links of the chain. This accounted for the strength with which so small a fish was able to fight, though the suddenness with which it gave up the struggle is less easy to understand. The bait was untouched, but it was doomed to fail me. No sooner had I released the little prisoner than the bait was again taken by a tarpon, but the hook came away immediately with a beautiful little tarpon scale impaled on the point of it. Two such uncommon experiences within an hour seem a generous share, but I am giving the facts as they were.

Too often, without any apparent fault on the part of the angler, the hook comes away at the first jump of the tarpon, and in some cases it flies alarmingly near the man in the boat. Now and then, too, when he has his fish seemingly well hooked, there comes a sudden check, and he reels in, to find that fish, hook and leader are all gone, with goodness knows how many yards of line as well. This is not the work of the tarpon at all, but of a smaller intruder called kingfish, which, to serve its own ends, gives its big neighbour its liberty. What happens is this. The bait runs up the line when the tarpon seizes the hook. This is a familiar result in other kinds of fishing, notably for large pollack and bass, and opinions are divided as to whether the fish blows the bait up the line in its futile effort to eject the hook, or whether it takes out the line so rapidly as to pull it through the hole in the bait. When the tarpon bait has travelled some distance up the line, the gleam of it attracts a roving kingfish, which just cuts through the line with its razor-like jaws and goes off. The only remedy for such a contretemps is a rigid piece of wire attached just below the swivel and at right angles to the leader. This should effectually prevent the bait going above the wire, and against that even the jaws of the kingfish are powerless.

Such is the manner of trolling in the deep water of Boca Grande. In Captiva Pass, which is shallower, no lead is used, but I believe that the proportion of fish lost to the number of strikes is much greater. In the river at Tampico the sinker is also dispensed with, and the bait is a mullet

about eight inches long. Trolling in this fashion may likewise be practised round the Bogue Islands, at Montego Bay, Jamaica and round the rocks of the Trinidad Bocas, where the tarpon is known as the *grand-écaille*. The tackle used at the latter station is somewhat different, including as it does fifty or sixty feet of brass wire above the hook, and the bait is a small fish, locally known as " sardine," which is found in shoals round the Bocas throughout the summer months.

II. STILL FISHING

What the Americans call " still-fishing " we call " gorge-fishing," and neither name is very sweet, though the American name suggests the restful angler rather than the victim of its own greed. Briefly, as in pike-fishing, which is described elsewhere in these pages, the principle of this method is to give the fish time to swallow the hook before striking, so that, with the steel deep in its vitals, it has little or no chance of throwing it out at once, as repeatedly happens when trolling. Were the catching of fish all of fishing, much might be said for a mode of angling that makes the capture of nearly every fish hooked a moral certainty. Yet, though a bird in the hand may be worth two in the bush to the fowler who earns his living in this way, the amateur fisherman prefers a spice of uncertainty and would rather catch his tarpon in a way more favourable to the fish. Trolling with moderately light tackle gives the tarpon all the chance it needs, and the sportsman who beats it against such odds is fairly entitled to the victory. It is not to be denied that some who have killed tarpon in Florida by both these methods award the palm to river fishing with the gorge bait, but this claim has been based on the greater sport involved in gaffing each fish alongside the boat in deep water, where it can fight to a finish, instead of (as in the Pass) in shallow water close to the beach, where it is incalculably handicapped in its final struggle. At Tampico, therefore, where the tarpon is both caught by trolling and gaffed in deep water, still-fishing would lack even these admirers. As a matter of fact, I have perhaps overstated the certainty of killing most tarpon caught by still-fishing, for one case was brought to my notice in which only two were saved out of eleven hooked. The method is simpler even than trolling. The bait, a whole mullet, is allowed to lie on the bottom, and the fisherman lays his rod down in the boat, with a little slack line pulled off the reel. He may then, if so minded, read a book, but always with one eye on the

rod, and when he sees the slack line running slowly through the rings, he quietly picks up the rod, waits till all the line is out, and then strikes with all his might. By this time the unfortunate tarpon ought to have the hook and its cowhide leader well down in its inside. No doubt it puts up a good fight, even with such a handicap, but it cannot do itself the same justice as a fish hooked in the mouth. Where tarpon have to be caught in rivers, there seems, however, to be no choice. It is a case of gorge-fishing or nothing.

NATURAL HISTORY OF THE TARPON

The life story of this splendid fish is anything but an open book, but the few facts generally known about it may be of interest. That it jumps high out of the water when hooked will have been gathered from what has gone before. That it rarely jumps on any other occasion may also be taken for granted, but that it sometimes does so, when pursuing its prey or possibly when escaping from sharks, is also incontestable. This trick of leaping is characteristic of other kinds of fish in the Gulf. The great whiprays jump continually to throw off the sucking-fish that cling to them, but they are unable to dash through the water at the great pace of the tarpon, else they would not have any need of such gymnastics. The little ladyfish, which may be caught on light tackle in the backwaters, is an even more determined acrobat than the tarpon, throwing one somersault after another when hooked. One case, at any rate, of a tarpon performing a high jump without the provocation of a hook in its mouth is recorded from Miami, where a fish of 130 pounds jumped on board a steam yacht, in 1905, and did much damage before it could be dispatched. Many a salmon has jumped into boats before now, but a living projectile of such weight must have been a novel experience to those on board.

The tarpon's food and manner of feeding cannot be said to be matter of common knowledge. That it preys on mullet and other small fish is certain, for clouds of these may be seen leaping out of water to escape from its jaws, like minnows before a trout. Most of its second cousins, the herrings—the relationship is hardly perhaps so close, but the kinship may be thus indicated for practical purposes—feed at the surface, and the tarpon does likewise, but it also feeds forty or fifty feet or more beneath the surface, as proved by its taking the bait at that depth, and Vom Hofe used to catch

his biggest fish close to the bottom. Further evidence of its preying on ground game was afforded by a blue crab (not a swimming kind) which I found inside a tarpon of fifty-five pounds. Now and then the tarpon will follow the bait close to the boat, like a mackerel. One which looked to weigh about eighty pounds followed my hook in this way and snapped at it alongside the skiff, nearly pulling me over the side, as I was unprepared for such a visit. I did not, in fact, strike, and the fish just threw out the hook without even jumping.

In appearance the tarpon suggests a gigantic herring. The symmetrical outline, the large round eyes, the deep cleft of the mouth and the blunt, snub nose help to fix the family likeness. Its back fin is, however, provided with a very long ray that distinguishes it from the true herrings, which lack this feature. What may be the object of this appendage, if it has any, we do not know, though some writers regard it as part of the tarpon's steering gear, enabling it to make those wonderful twists and turns with which it outdistances most sharks and puzzles many fishermen. This, however, is just a theory without much to support it.

The scales are very large, recalling those of the pilchard. Some of them exceed five inches in diameter. One edge is silvered, and there are radiating lines like the spokes of a wheel. One edge also is scalloped. In the natural position, the scales are so overlaid that they show only the silvered portion.

The tail, like that of the herrings, is deeply forked. The gills are bright scarlet, and when a large tarpon rises close to the boat and shakes its grisly head in its effort to throw out the hook, they look as if suffused with blood. The roof of the mouth is very hard. There are no teeth in the jaws, though the tongue and palate are studded with minute spines, and prominent bony ridges are found beneath the tongue and on the roof of the mouth.

A question of great interest to the fisherman is that of how long and how heavy tarpon grow. Unfortunately it cannot be satisfactorily answered without further data to go on. Tarpon fishing is, comparatively speaking, a new sport, and the authentic records do not include more than three or four hundred large specimens. One American textbook refers to a fish of 300 pounds, but I have failed to obtain details of this individual. The heaviest authentic tarpon weighed 210 pounds, and even that weight was, I believe, arrived at with the aid of a tape measure. There is more than

one formula for calculating the approximate weight of these fish from certain measurements. That which was formerly in general use was as follows:

Let x = the extreme length in inches, y = extreme girth (also in inches), then

$$\frac{x \times y^2}{800} = \text{weight in pounds.}$$

A newer, and much simpler, formula, which is said to give equally accurate results is:

$$\frac{(\text{length in feet})^3}{2} = \text{weight in pounds.}$$

For ordinary purposes, either of these should work out close enough to the truth, and it is chiefly to be recommended because it enables the fisherman to weigh his tarpon without killing him, since each fish can be measured with the tape and returned to the sea alive. It is, however, doubtful, whether the result would work out satisfactorily in the case of fish in abnormal condition, for the length does not bear a constant relation to the girth. Thus, in two of my own fish, there was a difference of 23 pounds corresponding to only two inches difference in length.

Without wishing to cast doubt on the authenticity of the fish of 210 pounds, or even of that of 300 pounds, I am bound to confess to a feeling of surprise that not one out of the hundreds weighed during the past ten years at Useppa has, so far as I am aware, exceeded 178 pounds, a splendid fish killed in 1902 by Mrs Turner Turner. If there were a net fishery for tarpon, such as existed at one time, we might hear of monsters, for all the biggest salmon at home are taken in the nets and not on the rod. Nowadays, however, the tarpon is considered unmarketable, and is therefore caught for sport only, so that once it is too old and cunning to be caught with the hook, it passes out of human ken. Nor is there any chance of the sea casting up its remains for the information of science, since, even if the sharks did not devour them, the turkey buzzards line the beaches on the look out for such jetsam and leave little for the museum.

So far, with a brief fishing season and few anglers, the tarpon cannot be regarded as an educated fish. Fish soon learn caution. Not only are there wary trout and roach in overfished streams at home, but even the bass and grey mullet near piers and harbours have to be approached carefully

if they are to be successfully deceived. One very successful tarpon fisherman, who, with his wife, made great catches in the early days of the sport, foretold that tarpon would not be long in learning the ways of man, after which the clumsy tackle and crude baits would be ineffectual. When I visited the Gulf of Mexico, there were no signs of the tarpon having profited by experience, nor is it likely that they would, for out of the hundreds of tarpon that enter the Passes during the month of May only a very few are hooked without ultimately being caught. Where, however, it is the practice to return each fish alive, it is probable that the lurking danger of hooks becomes more generally known in the dim underworld, and the tarpon are more in the position of trout in a Hampshire stream, most of which must, at one time or another, have been pricked by the hook. The most unsophisticated tarpon in all my travels were those of the Spanish Main. I recollect how, more particularly when moored off the quay at Colon, Captain Laws, of R.M.S. "Tagus," and myself hooked these fish in crystal-clear water alongside, but on that voyage they invariably broke away. On a later occasion, however, Laws succeeded in catching a couple of them.

GENERAL CONSIDERATIONS

Something was said above of the excessive strength of the old style of tarpon tackle and of the welcome introduction of lighter gear by our American friends, who, to do them justice, are usually the first to condemn abuses of their own creation, whether these be fishing tackle or freak dances. The reform was a desirable one, for "logey" monsters, like the black sea-bass of California, or the more sluggish jewfish of Florida, tackle modelled on a derrick is quite appropriate, but so gallant a fish as the tarpon calls for more chivalrous treatment. Small tarpon, up to forty pounds, have been killed on salmon tackle in the estuaries of Jamaica, and, though it would perhaps be going to the other extreme to use it for the big fish, one of which would take a day at least to kill on such gear, lighter rods and finer lines should appeal to every sportsman. I am not advocating too long a spell of cat-and-mouse play, but, on the other hand, sudden death is not the ideal either, else we might as well catch our tarpon with dynamite. The old salmon standard of a minute for every pound was hardly reasonable,* yet, on the heavy tackle, I killed a tarpon

*Such a standard is quite inapplicable to salmon-fishing. Five or ten minutes often suffice to bring a twenty-pound salmon to the gaff.—ED.

of 140 pounds in little over half an hour, and that, I maintain, is too quick for sport. It was, in fact, butchery, and the fight was won not by the fisherman, but by the uncompromising rod and the too ingenious reel. Skill, with such tackle, counts for little or nothing. Only with a lighter rod and with fewer drags on the reel would skill be needed. With the old tackle, it was a question merely of endurance, though there were, no doubt, circumstances in which experience made good where ignorance of the game would have failed. One case in point was the intervention of a shark. The first impulse of the inexperienced tarpon-fisherman on seeing the sickle fin of a shark cleaving the water in the wake of the tarpon on the hook would probably be to reel in with might and main so as to haul the tarpon out of the marauder's reach. This is the very worst thing to do in the circumstances. It would not defeat the ends of the shark; it would further them. It makes the tarpon forget the danger behind and resist only the coercion in front. Its natural instinct is to pull in the opposite direction, which, of course, takes it right into the shark's jaws. The proper course for the angler to take is to give it line, pulling this off the reel if necessary, so that, with no other drag on its movements, it will probably keep out of the shark's way long enough for the boatman to reach the shallows whither the shark, being an arrant coward, is usually afraid to follow.

A tip may also break while playing a big fish, and this means good-bye to the fish. Yet even in such stress, exceptional coolness and skill on the part of the fisherman and his guide may save the situation. I was witness of what I imagine to be one of the most remarkable cases of such a recovery on record. The tarpon was an immense fish of 160 pounds. Everything was in its favour. In the first place it was foulhooked, which, as every fisherman will know, meant enormous fighting strength in a fish of such weight. In the second place the episode occurred in bright moonlight, which always immeasurably increases the difficulty of fishing by distorting every object and altering the perspective. It was in such circumstances that the rod broke. Humanly speaking, the fish ought to have been lost. Yet it was saved, though not without the guide climbing over the stern, risking a capsize in water alive with sharks, and handlining the tarpon to the gaff. It was a superb performance on the part of both men in the boat and one that will not soon be seen again.

One American writer, as categorical as the late Mr Gladstone, has enumerated eight different ways in which a hooked tarpon may be lost. Five

of these, arising from the failure of faulty tackle, are of secondary interest. Two are attributable to bad fishing, either by a too severe and sudden application of the brakes on the reel, or by slacking the line and letting the hook fall out of the tarpon's mouth. The eighth case deals with faulty gaffing by the guide, a frequent cause of trouble when I was in Florida. Perhaps the men have improved since those days. Yet, with lighter tackle in use, and the consequently slighter control exercised by the fisherman, gaffing must be a more difficult business than before. Let us hope that the fisherman of the future may dispense with the gaff altogether, taking a harpoon solely for use against sharks. It is a poor business slaughtering tarpon. Disgust with it makes a man recall the feelings of the Duke of Wellington after his victory at Waterloo, when he wrote to Lady Shelley that a battle gained was, next to one lost, the greatest misery in life.

The many-sided charm of tarpon-fishing arises, no doubt, from the great size, weight and fighting powers of these fish. Their habit, moreover, of jumping out of the water more than once when hooked, like trout, makes their capture quite different from that of the "leaping" tuna, which rarely leaps at all when hooked, whatever it may do at other times, but goes off at a tremendous pace, never showing itself again until beaten. Critics of sport, whose logic often lags behind their zeal, often blame us fishermen for liking the big fish. Yet the taste can hardly be condemned when it is remembered that the big fish make the best fight of it and have the best chance of going free.

The social element of sport in the Pass is another pleasure. As a rule, the angler is a lonely being, infinitely preferring to fish in his own company and tolerating at most that of a gillie. This aversion to other society is not, as uncharitable folk allege, due to the hope of surreptitiously fishing with worm or minnow on water sacred to fly, but arises from the knowledge born of long experience that river-fishing is a business in which, particularly in fly-fishing, too many cooks spoil the broth. The sea, however, has room for all. On favourite whiting grounds at home, just as in the mackerel fishing at Madeira, it is no uncommon sight to see fifty small boats anchored in such close proximity that it would be almost possible to step from each to its neighbour, yet all catching fish. Even so, in the Pass on a sunny afternoon, a dozen boats may be found drifting side by side, the flotilla from Useppa being augmented by gigs and dinghies from the yachts anchored above the lighthouse. That such publicity occasionally involves "playing to the gallery" is undeniable, but the sport

suffers little, and chaff or congratulation is received in equally good spirit. Very different from the hot days in the Pass are the nights, with or without moonlight. On a bright night the scene is beautiful, and the water is usually still, as the strong afternoon breeze normally dies away after sunset. On some evenings, too, the fish feed better than during the day, and one moonlight night I had a brace, each of them 108 pounds, within an hour. Quite distinct, and to my taste much less pleasant, is the effect of a pitch-dark night. Indeed, I actually dislike it, for not only do the conditions make the playing of so large a fish a very difficult and comfortless operation, but the sensation when a giant ray suddenly leaps in the air and comes down on the water with a terrific crash close to the boat is anything but soothing. Although these leaping rays always manage to rise clear of the skiff on moonlight nights, I was never quite sure that one of them might not miscalculate in the darkness, and the prospect of having to swim for it in a narrow strait teeming with sharks was no part of my programme. Yet, when we remember the size and strength of the sharks and other fishes in those seas, accidents are curiously few. The only fatality of which I have any record was that of a boat found adrift off Galveston, in Texas, containing two dead bodies, one of a tarpon and the other of a fisherman. The unfortunate man must have gone out without a guide and paid for his economy with his life, since a guide at the oars would have been able to keep the boat clear of the falling fish. Mr Vom Hofe once " jumped " a tarpon so close to a neighbouring boat that it fell on one of the oars and broke it, and Mr Otis Mygatt was badly hurt one dark night by a porpoise falling on him. It was, I think, the memory of Mr Mygatt's porpoise that chastened any joy I might otherwise have felt at being out those dark nights. Mr Dimock is of opinion that tarpon and other leaping fishes can actually change their direction while in the air, steering clear of boats into which they might otherwise fall.

OTHER FISHING IN FLORIDA

The tarpon, while undoubtedly the first prize of such a trip, is not the only good fish in those seas. There is a variety of big game in the Pass itself, and on boisterous days, when Pass fishing is out of the question, the shallows round Useppa Island give excellent sport with fish of smaller size but good fighting mettle, which afford first-rate opportunities for light tackle. On the heaviest gear they give no excitement, and the very

serious tarpon-fisherman regards them, no doubt, as vermin, just as amateurs in Australia, when fishing for snapper, contemptuously allude to all other kinds of fish, with the single exception of another of scarlet raiment, as "wrong colour." Nevertheless, on the light tackle used as at Catalina, the kingfish, channel bass and cobia will try the angler's skill as severely, in proportion to their size, as the tarpon itself. The kingfish and cobia seize the bait close to the surface of the water and fight gallantly to the last. The channel bass, groupers and jewfish are caught by accident whenever the bait is allowed to sink too near the bottom. This happens when there is too much line out, and the guide suddenly changes the direction of the skiff or rows more slowly. The jewfish are lazy, ponderous creatures that must be "pumped" to the surface with tremendous effort, coming up at the end of the struggle on their sides, like drowned pigs. Far more active are the sharks. On one occasion I lost more than two precious hours tied up to a shark that measured fourteen feet from snout to tail and must have weighed over 1,000 pounds. The only animal, besides fish of some sort, that the angler is likely to hook in the Pass is a turtle. These loggerhead turtles may be seen on the hottest days, swimming lazily along the top of the water. They do not take the bait, but occasionally they get foul-hooked in the flippers. The sequel, if the angler does not at once settle the business by cutting his line, is a long and arduous struggle all the way to the beach. These turtles come on land the first full moon in May to lay their eggs in the sand. The eggs are greedily eaten by the coloured folk and half-castes, and hungry bears, newly awakened from their winter sleep, also shamble down to the beaches at night and dig them out of their hiding-places.

In the shallower water round Useppa Island and elsewhere at the back of Charlotte Harbour, the two fishes that give the angler most amusement are the squeateague and sheepshead. The squeateague, a handsomely spotted fish which grows to a weight of three or four pounds, goes locally by the name of "trout," or "sea trout," and to the casual eye it no doubt resembles these fish, though it lacks the adipose fin found in all salmonoids. It is chiefly caught from boats, the bait being a dead "minnow," or "shiner," hooked just above the tail. An old trout rod, with light gut tackle and a small float fixed three or four feet above the hook, will answer the purpose admirably, and it is of first importance to strike smartly the instant the float goes under, as these fish are very quick at knocking the bait off the hook, and I remember missing my first half-dozen when

fishing in an approaching thunderstorm off Punta Gorda. Once hooked, a squeateague of two or three pounds plays in a fashion not unlike a mackerel, boring in circles and doing its best to double under the boat. In their right season (whenever that may be) these "trout" are said to be good eating, but in May I found each one full of worms and fit only to throw back alive. The sheepshead, which is a black bream, must be caught from the wharves, with a fiddler-crab for bait. These crabs simply swarm in the mangrove roots above highwater mark, but at the least sign of danger they dart back into their burrows at top speed, and some skill is requisite in catching them alive. It was while so engaged that a friend of mine, on his second day at Useppa, going barefoot in the shallows, ripped his foot on a broken bottle and was obliged to hurry north for surgical aid, an abrupt ending indeed to his holiday. The fiddler crab is hooked through the tail and used on float tackle, so adjusted that the bait just clears the bottom. In this way it is dropped as close to the piles as is considered safe, and it is no easy matter to keep a fish of even four pounds (the heaviest I caught) clear of the wharf.

Several other small and attractive fish are caught in these backwaters, including Spanish mackerel, which grow to three or four pounds' weight, lady-fish (also called "weak fish"), which, though weighing only a pound or two, leap on the hook like trout, and others. The most plentiful of all are those vermin, the catfish, and the only hope of avoiding them is to keep the minnow well away from the bottom.

My own fishing was, as will have been seen, on the west coast of Florida, but excellent sport is to be enjoyed on the east side, off Miami, Palm Beach and the Keys, and I have to thank Hugh T. Pigott, Esq., for the accompanying photograph of his big sailfish, as well as for the following interesting note on these localities:

> "The largest sailfish I saw measured eight feet three inches. Mine is six feet nine inches, and I caught it off Miami while fishing the Pass for tarpon. It played right on top of the water, occasionally making small jumps, varied by long runs. The 'sail' and 'centreboard' are very curious. This year (1912) has been an extraordinarily good one for sailfish, and I believe that over thirty have been caught at Palm Beach alone, whereas in previous years ten were the usual number caught for the whole season. Palm Beach, Miami and the Keys (outside) are, I fancy, the only localities in which this fish is

A SAILFISH.

caught on the rod, and it always appears to be either right in the Gulf Stream, or else in the strip of water, three miles in width, between the Stream and the shore. . . . I caught a fine amberjack of forty-two pounds near Jewfish Creek, identical, I believe, with the Catalina yellowtail. Bonefish (*not* the leaping ladyfish) are much sought after among the Keys. They give pretty sport, and have become quite a cult among the veterans. The bonefish go on to the shallows to feed in about two feet of water. They are easily seen on these grounds for the dorsal fin and part of the tail are out of water, and they rove about in bands of six or eight, pausing now and then to forage among the weeds. The method of fishing is as follows. A flat-bottomed boat is poled as quietly as possible to the shallows and moored there. The bait is a hermit-crab, and an old trout rod with light tackle serves the purpose. It is necessary to cast at least twenty yards. Presently there is a swirl. This means that one of the little bands are hovering round the bait. The angler now tightens the line—it is dangerous to strike—and, with a magnificent dash, one of the bonefish has taken the hook and is making a frantic effort to reach the deep water, tearing yards of line off the reel and putting up a long fight. Even at the end, the last rush when the fish is alongside often proves fatal to success. I understand that, when hooked in deep water, the bonefish gives indifferent sport. It is a beautiful fish, obviously built for speed, and averaging a weight of six pounds. A ten-pounder would be unusual. It is found round Miami and in Biscayne Bay and the Keys, and, as hermit crabs are less plentiful than could be wished, there is at times a corner in bait. There has been some confusion between this species and the leaping ladyfish of the west coast, but they are quite distinct. Tarpon were very late this year. I got only seven (heaviest 128 pounds) and had to work hard for them."

Such, then, is the sport which Florida offers to the angler in the sweet of the year. The climate is nearly perfection morning and evening, though a little trying to sensitive complexions during the heat of the day. As a change from fishing, or when the weather is too rough even in the backwaters, an alligator hunt may be organized, though the chances of catching a large specimen are nowadays remote. The tourist must, therefore, be satisfied with the amusement of capturing little ones and with the novel experience of hearing his guide imitate the alligator's grunt in

order to lure the reptile from its hiding-place. That this quaint proceeding would be even more interesting if it ever met with the faintest response is not to be denied, but, after all, much of the joy of any sport lies in the anticipation. And the one abiding glory of the visit to Florida is the battle with the leaping tarpon, the most glorious of all the fish that ever bent my rod. Some idea of its amazing agility will be gathered from the two remarkable photographs of the fish in the air, for which I have most cordially to thank Messrs A. W. and Julian Dimock.

Photo by] [Julian Dimock.

THE FIRST JUMP.

Photo by] [Julian Dimock.

NEARING THE END.

III. THE TUNA, OR TUNNY

By F. G. AFLALO

WITH those who have caught both, it will always be a question whether the tarpon or the tuna is the better fish from the standpoint of sport. Considering their rival claims dispassionately, as one who has caught tarpon, but has journeyed many thousands of miles after tuna, and always in vain, I shall, even at the risk of being reminded of the sour grapes out of reach of the one and only fox ever known to seek such fare, vote for the tarpon, since its trick of jumping when hooked puts it in the category of all the best game-fishes that do likewise. If I have not had the fortune to hook a tuna, I have at any rate watched J. K. L. Ross, of Montreal, pioneer of the sport in Canadian waters, and recently host and guide of H.R.H. the Duke of Connaught, towed by one up and down St Ann Bay, Cape Breton Island, for hours, and his boat passed close enough to enable me to form a fairly correct idea of the sport. In putting the tuna second, I do not lose sight of its immensely superior size, weight and strength. Compared with such tunas as Ross fought and beat in those northern waters, the longest and heaviest tarpon on record is as a herring to a salmon. It is only by reason of its repeated leaping when hooked that I give the tarpon precedence. The tuna may occasionally justify its name of "leaping tuna" when chasing its prey in the ordinary course (though I never saw it do so), but it rarely jumps like the tarpon, when fighting for its life at the end of a rod, thereby losing much of its charm for the fisherman. Once it may jump, as did the big fish caught by Ross, but its main idea of fighting is to swim along in deep water, and so tire out the man in the boat.

Just as the tarpon is, broadly speaking, a giant herring, so the tuna is an immense mackerel, growing to a length of ten feet or more, and a weight exceeding a thousand pounds. Its range is far wider than that of the tarpon, including at once the sunny seas of California and the ice-cold waters of Cape Breton. It is plentiful in the deep waters of the Atlantic, round Madeira, and it finds its way through the Mediterranean and as far as the Black Sea. Like the sardine, on which it preys, it is a fish of uncertain habits, here to-day and gone to-morrow, and just as the sardine fishery has failed on the coast of Brittany and elsewhere, so the once

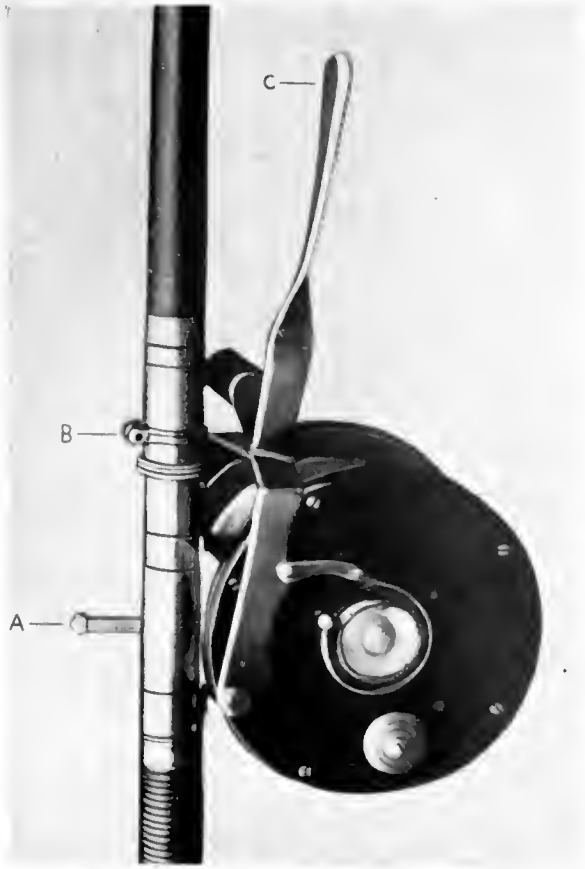
flourishing tunny fishery has deserted Nice. Upwards of four thousand tunnies were caught off that port in one day, during the spring of 1855, but five years later the fishery was abandoned, and has never revived. The most regular and profitable tunny fisheries to-day are those of Madeira and the Biscay coast, with handlines. The bait used at the former is a mackerel, whereas off St Jean de Luz a shredded husk of maize is preferred. Throughout the Mediterranean these fish are taken in various forms of fixed nets, and in the Sea of Marmora the "talian," an ancient kind of fish-trap, may be found in general use, while here and there the tunny is still speared at night with the aid of a flare hung over the prow to attract it within reach.

The food of the tunny apparently consists of all manner of small surface-swimming fishes, and notably mackerel, flying-fish, herring and gaspereaux, the last-named being a kind of shad abundant in Canadian waters. It also devours quantities of squid, and we noticed that on days when these swarmed in St Ann Bay the tuna rarely touched our baits.

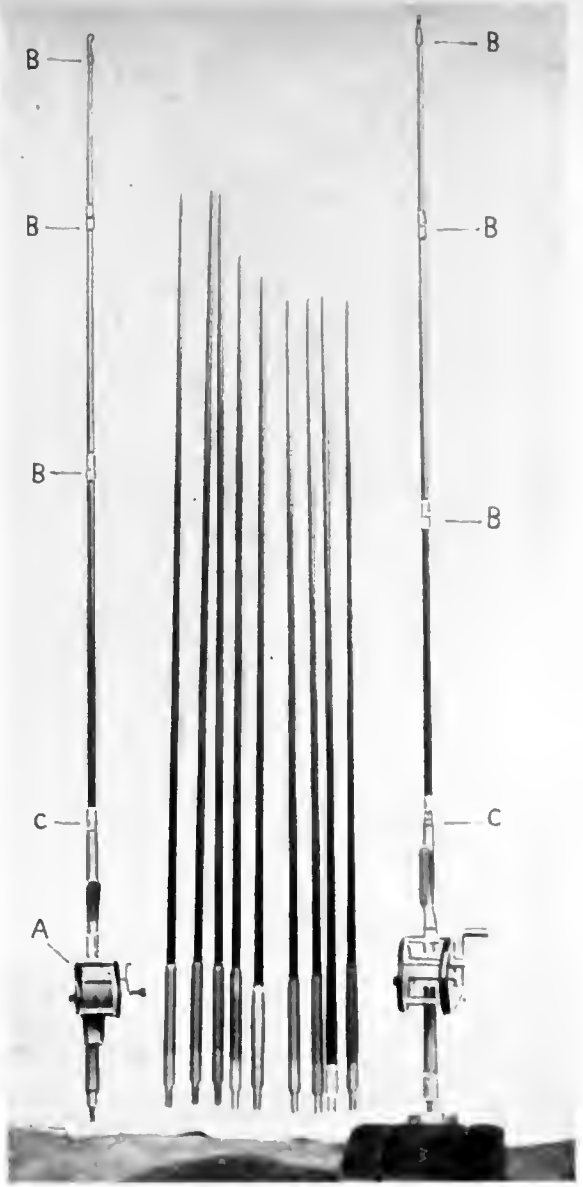
The tackle already described for tarpon fishing will approximately answer also for tuna, though where these fish run their largest, as at Cape Breton, everything must be more powerful, as their strength is enormous. Even at Santa Catalina Island, where they run smaller than farther north, one of them towed Mr Holder's boat up and down the coast for fifteen hours and then broke away, and Ross was on one occasion towed for nineteen hours by a fish that also escaped in the end. Much of the tuna's superior speed and strength, and, above all, much of its wonderful endurance, may be attributed to the fact that it remains under water, and wastes little of its energy in leaping. The tarpon's jumps may occasionally give it freedom, and are always embarrassing to the fisherman, but they undoubtedly account for the short time in which so large a fish is brought to the gaff.

Without doubt, the most efficient outfit for such big game fishing that I ever saw is that designed by Mr Lorenzo Mitchell Henry, and the accompanying photographs (for which I am indebted to "The Field") illustrate some of the many improvements effected.

In the first place, it will be noticed that the rod rings, or "guides," are not, as hitherto, bound to the rod, but are detachable, and may be slipped over the top of the rod, and used on either side, so that the tips can be bent alternately in any direction, and the strain equalized. With



MR. HENRY'S REEL ATTACHMENT.



MR. HENRY'S ROD WITH
REMOVABLE RINGS.

the rings thus removable, the tips can be packed in bundles, and when one is broken with the play of a heavy fish, another can be substituted without loss of time. In fact, these removable guides are, in themselves, a vast improvement on the old system.

The second, and even more important, innovation takes the form of a kind of turntable, with a square socket that fits in a corresponding hole in the butt of the rod. With the aid of this device, the rod can be swung in any direction, and the reel is always above it. It is, in fact, an attachment in every way superior to the old-fashioned leather cup.

The reel holds 400 yards of thirty-nine thread line, and is fitted with powerful brakes, but perhaps the chief improvement on the older pattern consists in the bolt and split collar ring which attach it respectively to the butt and tip, making it impossible for the latter to twist round, as so often happens with ordinary tuna tackle.

Last, but not least, a shoulder strap attached to the rod enables the fisherman, literally, to put his back into it and to get immense increase of power over the fish. In short, Mr Mitchell Henry's series of improvements must be welcomed as most ingenious, and he has lately added to them yet another in the shape of a hook with a barb on either side, which, while making no larger a wound, seems absolutely unable to tear out.

Something has been said of the almost world-wide range of the tuna (as it is commonly called by sportsmen), and it will now be convenient to consider in turn the various localities in which it either is, or might be, taken on the rod.

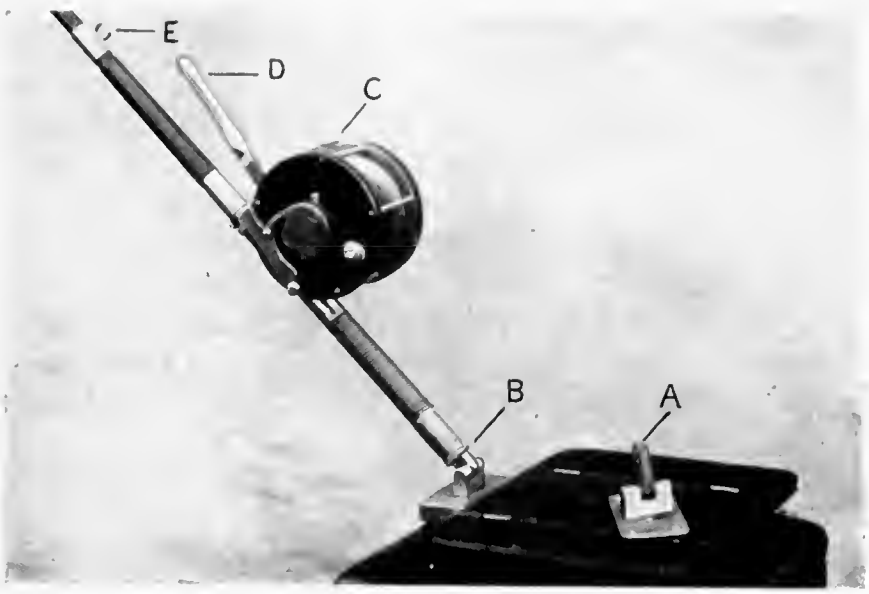
The nearest to England is, without doubt, the Biscay coast, in the vicinity of Bayonne and St Jean de Luz, and so on round the west side of the Peninsula. The French and Basque fishermen catch quantities of tunny, though not of the largest size, in the summer months, baiting their handlines with a shredded husk of maize, and anglers would probably enjoy sport by going out with the natives. Anyway St Jean de Luz, a favourite winter resort, is reached in little more than twenty-four hours from Charing Cross, by the Sud-Express, and this would certainly mean the nearest tunny fishing to be had.

Madeira at one time raised great hopes. Its possibilities were first suggested, early in 1905, by Colonel Stead, who, having caught tunny on the handlines used by the Portuguese fishermen, asked whether they could not also be taken, as in California, on the rod. I made the attempt

that spring, but was foredoomed to fail, not only because the natural conditions were, and still are, against success, but also because the native fishermen purposely put me off the track, for fear, as they afterwards admitted, that my success might attract too many fishermen to compete on their grounds. As a matter of fact, however, the deep water and rough seas present great difficulties, and even a resident sportsman like Mr Charles Cossart, with daily opportunities of fishing all through the year, and considerable experience of the work, wrote to me recently that the prospects were no more hopeful than seven years earlier.

> " I have had no luck with the rod since you were here. I caught two small tunny (*T. pelamys*), each about twelve pounds, but it was poor fun; and I had a much larger fish (estimated by my boatman at 180 lbs.) on for an hour and a quarter. I got the fish alongside, but the gaff did not hold, and the fish, diving beneath the boat, broke the line on the bilge keel. I hooked it on the top of the water, after which it made one slight run. Then I turned it, and it simply bored straight down, taking out nearly all the line. There could not, in fact, have been twenty feet left on the reel. Its next move was to swim away for some time, with the boat in tow, and then I managed to start bringing it up, ' pumping ' it American fashion, till I got it close to the boat. It was very tiring work, and not particularly amusing. I have been out many times, but never again touched one with the rod, though I had some luck with the handline. Last June, a tunny weighing just short of a thousand pounds was caught here, and it took four men about five or six hours getting it in. I fear the water hereabouts is too deep for the rod. The fish has to be hooked right at the surface, as, if it should take the bait in from sixty to ninety fathoms of water, there would not be enough line left on the reel to play it afterwards, as it only knows one trick, that of diving headlong as far as it can go."

The Portuguese fishermen, who go after tunny in large, deep boats, bait the hook with a large mackerel, the bait being kept alive in a barrel, into which the boat's boy is continually pouring water. Sometimes the mackerel is blinded, a cruel performance, supposed to make its erratic movements peculiarly attractive to the tunny, but one that is not invariably adopted. They pass the hook through its back and let it swim about fifty fathoms down. As Mr Cossart points out in his letter, the great depth of water is all against angling, since, whereas the Atlantic is 1,800 feet



MR. HENRY'S TURNTABLE.

MR. HENRY'S SHOULDER-STRAP.

deep close to land, no tuna reel has hitherto been devised to hold more than 1,200 feet of line sufficiently stout for the work. Hooking an immense fish on a line that will not even reach vertically to the bottom must always be precarious work, and when that fish is a tuna disaster may be looked for at any moment. It is the comparatively shallow water that makes sport enjoyable at Catalina and Cape Breton. The heavy ground-swell round Madeira, on even the calmest days, is another difficulty, as it throws a sudden strain on the tackle very liable to break it. In short, the casual visitor is likely to find the conditions far harder than a resident like Mr Cossart, and it is improbable that Funchal will ever become a recognized headquarters of the tuna fisherman. Some other kinds of sea fishing to be had round Madeira and the neighbouring islands are described elsewhere in these pages.

Constantinople seemed to me at one time to hold out greater promise, but the experiences of a summer spent in observation of the fish and fisheries did little to confirm that view. So far as the Bosphorus goes, the difficulty consists in neither rough water nor ground-swell, but in extreme depth and swift currents. It is, here and there, possible to fish in comparatively still eddies between the currents, and I found one such spot opposite Candilli, on the Asiatic shore, though no success attended my efforts. More favourable conditions might perhaps be looked for in the Sea of Marmora, not far from the Princes' Islands, which are a popular summer resort. I once saw several enormous tunny caught in a " talian " close to Kartal, on the mainland, but this is all open water, and it might be difficult to come across the fish, which are said only to pass up and down on migration.

Eliminating these potential tuna grounds, in or near Europe, there remain the two rival centres of the sport, Catalina Island, on the coast of California, and St Ann Bay, Cape Breton Island. No two spots could be much less alike, particularly in the matter of climate, and, after some experience of both, I do not hesitate to award the palm to the more southern ground. California, in the month of May or June, is more suggestive of Paradise than any other State in America, whereas, even at the height of summer, Cape Breton Island lies beneath grey skies and is often wreathed in the clammy fogs that blow off the not far distant Newfoundland Banks.

Until Mr Ross scored his first success against Canadian tuna, in the summer of 1911, a victory preceded by several seasons of defeat, that

fish had been taken on rod and line only at Santa Catalina. The mere fact of the tuna's occurrence so far north as St Ann Bay was nothing new, since it had been recorded in "The Field" at any rate as far back as the autumn of 1901. The true home of the sport, however, is Avalon, on Santa Catalina Island, where tunas have been caught on rod and line for more than twenty years, Mr C. F. Holder, rightly acclaimed the doyen of the sport, having, in 1889, caught one of 183 lb. The presence of tuna bones in aboriginal burial mounds on the island points to long familiarity with the fish on the part of the vanished natives, but its recognition as game for the fisherman was left to Mr Holder and his contemporaries, who, between them, founded, in 1898, the since famous Tuna Club, which aims at discouraging the use of handlines and at otherwise regulating the sport in the best interests of all concerned. Not content with advocating the exclusive use of the rod, the club has done much to popularize the use of light tackle for yellowtail, white sea-bass, and other game fishes of those seas, offering valuable cups, in addition to medals and buttons, for the heaviest specimens caught under approved conditions. The club draws its members from all over America, and has further conferred honorary membership on one or two anglers in this country.

Catalina Island offers wonderfully suitable conditions for big game fishing in comfort, such as are not, in fact, to be found anywhere else in the world. Deep water is to be found close to the beaches, and the high cliffs shelter the sea from the only wind likely to ruffle it in May and June. Rainy days are few and far between, and the tidal ebb and flow is so slight as to occasion no inconvenience. As a matter of fact, both sea-bass and yellowtail commonly feed best during the first three hours after high water. The one drawback to tuna fishing at Santa Catalina is to be found in the habits of the tuna itself. The fish is an inveterate wanderer, with no fixed programme for its travels, and cannot therefore be counted on, like the tarpon in Florida, at any given time of year. Sportsmen may therefore experience the disappointment, as I did myself, of making the long and expensive journey from England, without even seeing one. Indeed, of the two, Cape Breton seems to be much more regularly visited by the tuna shoals in August.

The fishing at Santa Catalina is done from motor launches, and the charge for each, including services of the man, who is engineer and fisherman in one, as well as bait and the use of tackle, is a sovereign for the half

TUNNY BOATS AT MADEIRA.

day, or £1 17s. 6d. the whole day. At first sight, no doubt, this looks a heavier charge than that made at Useppa and other resorts in Florida. On the other hand, the fisherman is spared the heavy item of £20 for his tackle, and Avalon is within an hour, or less, of the fishing grounds, so that far less time is wasted in running backwards and forwards. The remaining expenses of the trip would bring the total, including first-class travel out and back and a fortnight's fishing, up to about a hundred guineas, the daily charge at the Metropole Hotel, Avalon, with excellent rooms and such fare as they never dreamt of at Useppa, being 16s. 8d. a day.

The bait used at Santa Catalina for tuna is, when it can be had, a flying-fish; for the other fishes, either a "sardine," so-called, or a Wilson spoon.

In any case, all fishing is done by trolling, the bait being trailed a hundred or more feet astern of the launch. When after tuna, the shoal must first be located, and the launch is then headed towards it, skirting the outside of the shoal in a curve, so as to bring the bait across the fish. In fishing for white sea-bass or yellowtail, it is less essential to see the fish first, though a sharp-eyed guide will generally do so from an incredible distance away. As soon as the launch is opposite Goat Harbour, or any other ground usually frequented by these fish, it is slowed down and brought round in a curve, the line being allowed to run out rapidly. As in tarpon-fishing, the angler sits in a comfortable chair in the stern, with his back to the guide. If necessary, two can fish in comfort side by side.

For tuna, it is usual to jerk the point of the rod, so as to make the flying-fish skip over the surface in a natural manner, but this laborious action has been superseded by the successful use of a box kite, which has been found very effective.

The hooking of a tuna is strenuous work, as it may take out six or eight hundred feet of line at the first rush and then tow the boat for hours together. As, moreover, the struggling fish, unlike the tarpon, seems usually to be accompanied by others of the shoal, the line is not seldom cut through by their sharp back fins.

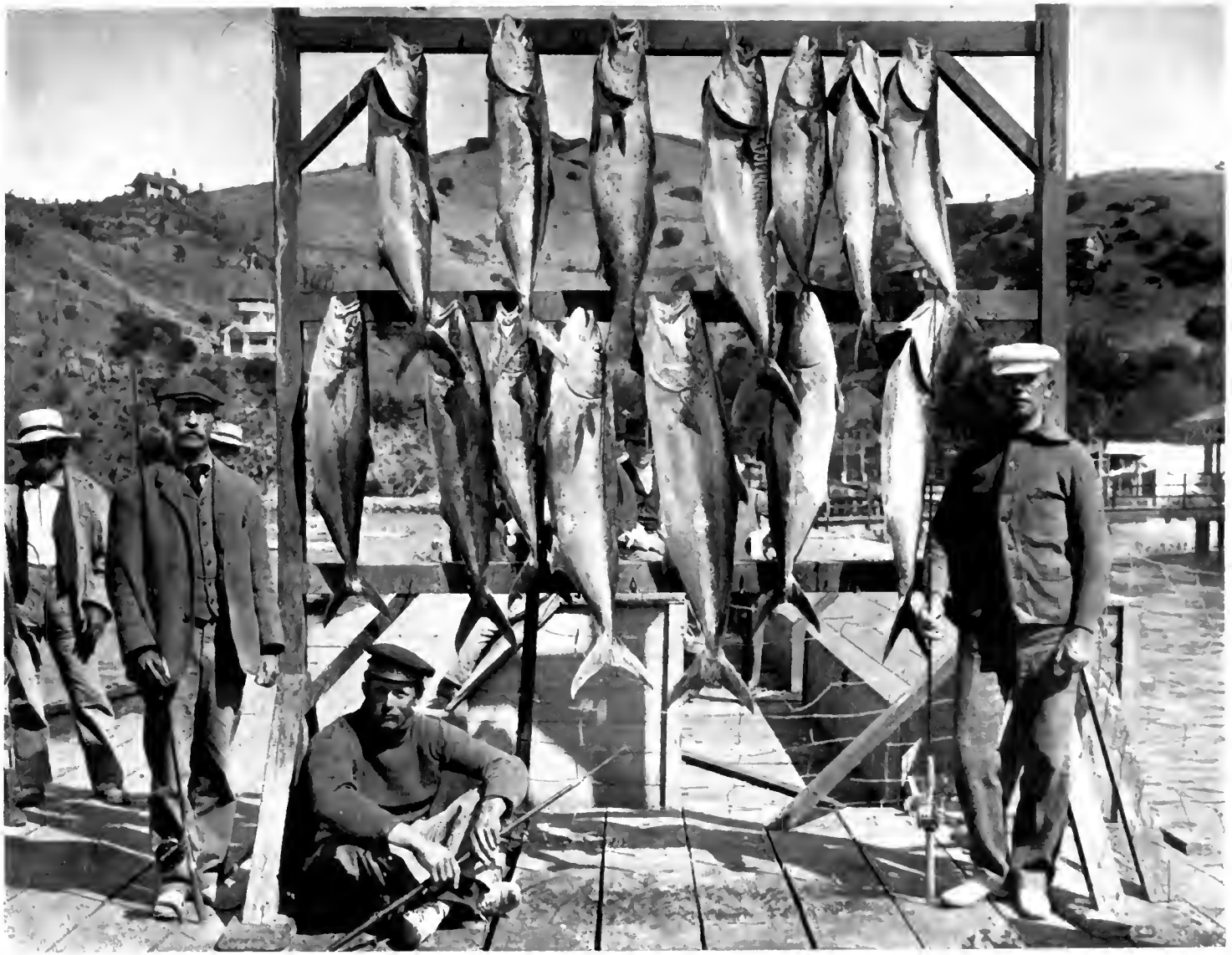
Among other important game fishes taken at Santa Catalina are the swordfish, yellowtail, white sea-bass, black sea-bass, yellowfin tuna, albacore, bonita, dolphin, opah, halibut, barracouta, Spanish mackerel and some others.

The swordfish is a magnificent adversary in the water, leaping even

more actively than the tarpon, and occasionally varying the proceedings by charging headlong towards the boat and driving its formidable weapon through the planks. A swordfish of 500 lb. will put up a tremendous fight. Several of large size have been taken off Santa Catalina and the neighbouring island of San Clemente, which has also for some seasons been famous for its large yellowtail.

The yellowtail and white sea-bass are usually taken in company, though the season for the latter is comparatively short, and it is at all times less plentiful than the yellowtail. After the tuna, they are perhaps, for their size, the hardest fighters in those seas. They are caught by trolling with light tackle and either a " sardine " or spoon bait. The record yellowtail was caught in 1908 by Mr Simpson, an Englishman, at San Clemente, and it weighed over sixty pounds. The white sea-bass runs even larger, and specimens up to eighty pounds have been caught with rod and line. The method of fishing is the same for both, as they feed on the same grounds. The launch is driven full speed alongshore until it is near a favourite spot for these fish. So clear and calm is the sea that an experienced guide can see the fish a hundred yards away, and he slows down the launch and flings a few sardines over the side by way of rousing the attention of the shoal. Then the launch is made to circle round the fish, and line is paid out. If a Wilson spinner is used, no sardines are thrown to the fish. The yellowtail takes the bait with a terrific rush, and fights with might and main to reach the kelp, which grows luxuriantly on the rocks along that coast. Once it gets into the kelp, it is as good as lost, and the angler must use his best efforts to restrain it. The white sea-bass occasionally takes the bait gingerly. It is, in fact, advisable when one of these fish takes the hook to pull a few feet of line off the reel and let the fish get a firm hold before striking, else it is apt to throw out the hook at once. After its first rush, the finest effort of the yellowtail is at the finish, when it catches sight of the gaff and makes off again; the suddenness of this last bid for freedom sometimes smashing the rod top across the gunwale.

The black sea-bass is no more like its white namesake than the grey mullet is like the red. The white sea-bass is, in fact, related to the spotted squeateague, or " sea trout," of Florida, whereas the black sea-bass belongs to the same family as the wreck-fish and other great perch-like fishes that keep on the bottom. This " logey " habit, as Americans call it, has led to the fish being confused with the jewfish of Florida, whereas



YELLOWTAIL.

it is, in reality, distinct and a much finer fighter. Unlike the other fish of those seas, the black sea-bass must be caught at anchor, as the bait has to lie perfectly still on the bottom. As, however, the fish may run to three or four hundred pounds, and is exceedingly powerful, the anchor rope has to be made fast to a white flag-buoy, so that it can be slipped the moment a fish is hooked, and picked up again when required.

A head of a yellowtail makes a good bait, or a large slice of barracouta is preferred by some experts. Heavy tarpon tackle is used, and as soon as the bait is on the bottom, the rod is laid down on the thwart, with the check on the reel, as in still-fishing for tarpon. At the first click of the check, it is slipped out of action, as these fish are very wary and easily suspect danger. The bass must move off with the bait before the fisherman strikes, and it is therefore advisable to count twenty before doing so. If the fish is felt to be properly hooked, a result which it promptly resents by moving rapidly out to sea, the anchor rope is thrown overboard and the man gets out his oars, as the engine would not enable him to follow every twist and turn of the maddened fish. A big bass makes a tremendous rush, and fights hard until exhausted, when it gives in quite suddenly and comes floating to the gaff on its back. I caught a brace one morning before breakfast weighing respectively 160 lb. and 130 lb., and felt little inclination for more fishing that day, so tiring was the experience.

The yellowfin tuna, a smaller relative of the so-called "leaping" kind, and growing to a weight of sixty or seventy pounds, was identified on the Californian coast for the first time in 1907, and is therefore a recent addition to the sea angler's game list. Now that it is known, it seems to visit those waters more regularly than the bigger kind and gives exciting sport on light tackle.

The albacore, bonita and dolphin are caught on the outer grounds, and all of them fight well on the rod and should, needless to say, be fished for with light tackle as prescribed by the Catalina Club rules. They are not stalked, like the tuna and shore-haunting fishes, but the bait is just trailed astern until a fish seizes it. The albacore is perhaps the best fighter, and, unlike most of the other fish in those seas, it will not take a spoon bait. Sardine alone is used, and the albacore is particularly smart in knocking the bait off the hook and must be struck sharply. Albacore are known to go in pairs, so that when one has been gaffed the launch is put about and

taken over the same ground on the chance of catching its mate. These fish are less shy than yellowtail or white sea-bass and have been known to take a bait close to the launch, possibly because in the dancing waters far from land the boat and its occupants are less conspicuous than in the smooth, clear bays inshore.

The opah, halibut and Spanish mackerel come under the head of occasional catches, for the first-named, one of the most brilliantly coloured fishes in the sea, has been caught, I think, only once on the rod at Santa Catalina. The season for the Spanish mackerel (an ocean-going bonita) is confined to early spring, and the halibut is taken only by accident when fishing on the bottom for black sea-bass. The barracouta, on the other hand, is of daily occurrence, and it gives, in those seas at least, so little sport for its size and formidable appearance that it all but comes under the category of vermin. It must not, however, be forgotten that a large piece of barracouta is an admirable bait for black sea-bass.

Santa Catalina is a paradise for the sea angler. The variety of its fishing, the splendour of its climate, and calmness of its sea, the social side of the sport fostered by the hospitable Tuna Club, and the not exorbitant cost of accommodation and fishing, combine to make it the most enjoyable angling resort on any coast within my travels. The one drawback for Englishmen is the time occupied on the return journey. Yet those who have the courage to face it may, in one short fortnight, enjoy the sea fishing of their life.

The conditions at Cape Breton Island, memorable for the recent and repeated success of Mr J. K. L. Ross at Englishtown, are, it must be confessed, less alluring, and although, in one sense, Mr Ross has earned the gratitude and admiration of his contemporaries by demonstrating the possibility of catching these immense Canadian tunas, his solution of the riddle has, in a measure, diminished the interest with which that problem invested those far-northern fishing grounds so long as it remained unsolved. Previous to the summer of 1911, the apparent impossibility of landing a Canadian tuna on the rod drew ambitious fishermen to the spot from all parts of the world. Some of us came from England, others from far California, but it was the man on the spot who won the trick, and no one surely grudged him the fruits of his untiring efforts which, for three summers, had proved fruitless, though in that period he had hooked and lost no fewer than thirty-four fish. These early failures were in great measure due to his lack of acquaintance with the canons

A LARGE BLACK SEA-BASS.

of big-game fishing. The rest of us, whether in Florida or at Santa Catalina, had had the advantage of help from those already familiar with the game. Ross had visited neither region, and had to teach himself. He learnt something from each failure, gradually improved his tackle, and changed his tactics, with the result that at length, on August 28, 1911, his patience was rewarded with a magnificent tuna weighing 680 lb., at once the greatest fish ever taken on rod and line, and the first large tuna so captured in British waters, though he had, only three days earlier, killed a smaller one of seventy-three pounds.

These mighty tunas have always been known to the fishermen of Cape Breton and Newfoundland, but it was not until the year 1903 that their identity with the premier game fish of Californian seas was recognized, as they had always been known in their northern haunts as "mackerel sharks," "horse-mackerel," or "squid-hounds." They apparently enter St Ann Bay, which is a few miles north of Sydney, regularly during the latter half of July, and they remain until the end of September.

Unfortunately, with the exception of trout in the neighbouring brooks and sea-trout in some of the estuaries, there is no other fishing of any note to pass the time when tunas are out of reach. Even the pollack fishing, which is described on a later page, is over in July, and the other sea fish are not of a kind to attract the angler. There is, unless Mr and Mrs Ross happen to be in residence at their charming bungalow opposite Englishtown, no society other than that of Scotch crofters of the third generation.

The bait used for these northern tuna is either a herring, a mackerel, or a gaspereau, the last-named being closely allied to our shad. American fishermen call it "alewife," and to the Indians it is known as "kyack." Bait was a constant difficulty at St Ann Bay, and it had to be requisitioned by telegram or telephone from markets as far distant as North Sydney. Fortunately a stale herring or gaspereau, if only it can be persuaded to remain on the hook, seems to be as acceptable to the tuna as a fresh one. The hook is either passed through the lips (as at Catalina) or through the mouth and throat, and in either case the lips are sewn up with thread or gut, the latter being less conspicuous when the water is very bright and clear. St Ann Bay is divided by a long spit of land, on which stands a lighthouse. Occasionally the tunas find their way into the inner harbour, and I once saw them playing like mackerel beneath my window at Englishtown, but as a general rule they must be sought in deep water nearer

the ocean, along Big Grappling and as far as Cape Dauphin. I saw Ross towed by one halfway to the Bird Islands and back. There is steamer communication with Sydney twice a week, and accommodation of a homely sort may be had with the farmers of Englishtown, but there is none of the comfort provided at Avalon.

The story of Ross's final success is as follows. He was rowed by his yacht's skipper and a second boatman, from the neighbourhood, round a shoal of tunas, and he saw among them just one monster, which he hoped would not take his bait. Needless to say, it did so next moment, and when he struck, it gave one terrific jump, and then settled down to business, its first rush being stopped only when but forty feet of line were left on the reel, so that it had taken out about 850 ft. Ross now started "pumping" in approved American style, and was actually able to wind in all but about a hundred yards before the tuna got its wind back, and was off again. This give and take went on for a couple of hours, always with diminishing strength on the side of the fish, until at last Ross was able to alter his tactics, and force the pace towards the inner harbour, inside the light-house, where, in shallower water, he hoped to have the tuna under better control. The fisherman's difficulty was aggravated by the fact that he was racing against time, since he knew well that in another half-hour the ebbing tide would make it hopeless to attempt what he had in view. Eventually, after a very gallant struggle, Ross got the great fish dead beat in shallow water not more than five or six feet deep. This was the beginning of the end, and it remained only for him to throw down his rod and handline the fish to the gaff. One or two failures with the latter, pardonable under the strain of dealing with such a giant, led to success, and at last this splendid fish was hauled on the beach at Eel Cove, and its measurements found to be eight feet ten inches long and six feet three inches in girth. There was no means of weighing such a fish at Englishtown, and it had to be taken back to Sydney in the yacht next day for that purpose. Such, in brief, is the story of one of the most memorable successes in all the annals of sea angling.

Whether these bays of Cape Breton Island (Mira Bay, where the water is much shallower, is another possible spot) will ever become as fashionable for their big-game fishing as those of California is very doubtful, since not only the northern climate, but also the undeniable absence of variety in the sport, is against them. Yet the recent visit of H.R.H. the Duke of Connaught, and the exciting experiences which he and his suite

MR. J. K. L. ROSS AND HIS RECORD TUNA

Photo by Julian Dimock PLATE LV.

MR. J. K. L. ROSS AND HIS RECORD TUNA

Photo by Julian Dimock

appear to have had with the help of Mr Ross, must have done much to draw attention to the possibilities of the sport, and those who have caught tarpon in British waters may like also to pursue the tuna without paying for the somewhat costly hospitality of American railway companies and hotels. The expenses of a trip to Cape Breton, with a fortnight on the spot (which, in the event of either failure or success, will be enough for most tastes), need not exceed £75, which, as big game fishing goes, is a very moderate sum. Moreover, with the advantage of all that Ross has learnt from both failure and success, a unique knowledge which, having stayed and fished with him, I can assert that he puts most ungrudgingly at the disposal of other sportsmen, it is no longer so hopeless a game as it was even three years ago, and the capture of a single tuna like his should be well worth the money.

IV. THE BASS

By F. G. AFLALO

FOR those who are compelled to confine their sport to home waters, there is no fish to beat the bass. There is excitement in the first downward rush of exceptionally large pollack, but large pollack are scarce in these days, and those of lesser weight give only moderate sport, for the pollack soon gives up the fight and comes tamely enough to the gaff after a very brief resistance. Large grey mullet likewise have their admirers, and are undoubtedly attractive, not only for their wariness before taking the bait, but also for their determined struggle afterwards; but the spots at which good mullet fishing can be reckoned on in England can be counted on the fingers of one hand, and even at these the fisherman needs something more than the patience of Job. There are even those who glory in catching tremendous skate, but, with all due respect for difference in tastes, I am quite unable to appreciate this amusement. I have been anchored to bigger skate in Australian seas than any of those so far recorded in Irish waters, and, after considerable experience of them, I would as lief hook a billiard table by one of its pockets and reel it to the surface. On the same grounds, at Ballycotton and elsewhere, they catch large halibut, and these are fish of very different mettle, being, in fact, the fiercest fighters of all the flat-fish, and also immeasurably the largest. The Moray Firth has long been the home of large halibut, and only last spring (1912) one that must have weighed over a hundredweight was cast adrift after a terrific fight with the crew of a cod-boat. Two of the men, who had succeeded in getting the monster to the surface and seizing it with the clips used in dragging heavy fish on board, were nearly pulled overboard. In the end, the halibut proved too strong for them, and they were compelled to let it go, clips and all. This incident has, of course, no connexion with angling for sport, and is mentioned only by way of showing that really heavy fish may be caught in the territorial waters of Great Britain.

These are some of the fish in great repute among those who fish in the sea. I venture to say that the bass, at its best, surpasses them all. It is a member of the fighting family of perches, but is as silvery as a salmon, and indeed, but that it never jumps out of water, the behaviour of a big bass during its last few moments on the hook is not wholly unlike that of

the most coveted fish in our rivers. The bass, then, is a sea perch, of a green, or blue-green, colour, with silvery scales. Small bass are of brighter hue, and lack the brown shades of older specimens. The head is broad, not unlike that of a large chub, and there are nine spines in the conspicuous back fin. These spines should be very respectfully avoided by anyone handling the fish when alive. The river perch, by the way, has twelve or fourteen spines in the corresponding fin, a matter of interest to the student rather than to the fisherman. Sharp spines in front of the other fins, as well as behind the gill-covers, make the bass a risky fish to touch without injury to the fingers. Young bass are, at an early stage of their existence, spotted all over, but in later life the only spot remaining is that on the gill-covers.

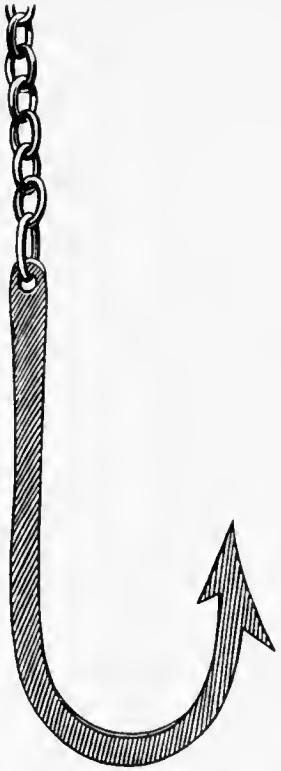
The greatest weight to which the bass grows is a question of some interest, but it is not easy to determine, if only because there is no very regular commercial fishery for it. Bass are rarely seen in fishmongers' shops in inland cities, and those offered for sale in seaside towns are mostly taken accidentally in the seine nets, the heavy fish occasionally getting trapped in the salmon seines, and the small shoal bass in shore seines used for launce or other kinds. Probably about twenty-four pounds would be approximately the greatest weight of bass on the English coast. Big bass are not so common as they were twenty years ago, probably owing to the great increase in the vogue of sea fishing for sport. The fish of eleven and a quarter pounds, which I caught in the Teign in 1902, has only once, to my knowledge, been beaten in that river, even in the salmon nets, and one of twenty-two and a half pounds, netted the same summer in the mouth of the Tamar, is the heaviest of which there is any recent record. In Turkish waters, on the other hand, the bass average a much greater weight than with us. Fish of ten and twelve pounds are quite common in the Sea of Marmora and its inlets, and I caught three of seventeen, which would be an extraordinary catch on the rod anywhere on our coasts.

That the bass is, within certain limits, a regular wanderer is beyond all doubt, though, owing to its lack of commercial importance, it has not been studied as closely as the herring or mackerel. So far as my own limited observations in the River Teign go, the small shoal bass, measuring from six to nine inches, put in an appearance some time during the month of April, the exact time depending on conditions of weather and temperature. They come in with each tide, ascending as far as mud-flats, four or five miles above the bar, and returning to sea on the ebb.

The heavier bass are not, as a rule, caught until June, and should be at their best early in July, the sport declining steadily through August, and coming to an end about the middle of September, though abnormal weather conditions may curtail or protract the duration of the season. Local wiseacres vow that some of these large bass lie up in the river throughout the winter, but as none are ever taken on the hook during that period, and as even the early salmon nets, which start fishing the first week in March, never catch any, the suggestion may be received with the same suspicion as that which favoured the migration of swallows to the bottom of ponds. Not every river, even on the South Coast, along which the bass is commoner than on either the east or west of Britain, seems to be regularly frequented by these fish. The Sussex Arun has always been a famous river for bass, which ascend even above Arundel, but I never saw or heard of any daily play of small shoal bass there, as in the Exe and Teign. The bass is a rarity in Scotch waters, almost as scarce perhaps as the pilchard. Indeed, it is by origin a southern fish, and it will not be met with much north of Sheringham, on the east coast, or Pwllheli, on the west.

The bass has an extraordinarily varied appetite, the result of which is that at nearly every seaside resort at which these fish are regularly taken, there is some local bait in which local sportsmen have implicit faith, and of these a list will presently be given. Speaking generally, it is a predatory fish in estuaries and in clear water, chasing the shoals of *brit** and sand-eels, and in such circumstances it readily takes live bait: prawn, spinner, or even fly. Where, however, it seeks its food in dirty harbours, or in muddy water after a spell of stormy weather, the bass turns scavenger —prowling along the shore for dead fish and other offal. At such times, the big "cobbler bass," as the fishermen call them, are most likely to take a bait of herring, bloater, skate's liver, or some similar mouthful, not too fresh, and the bait should lie still on the bottom. Throughout the Mediterranean Sea, where I have at different times caught bass from Tangier to within hail of Constantinople, the water is deeper and clearer than on our coasts, and, as a result, perhaps, of these conditions, bass are chiefly caught with live shrimps or prawns, though at Cannes, in the month of March, I found another crustacean in general use. This was a greyish-green mud-prawn called, in the vernacular of Riviera fishermen, *machotte*, and the manner of fishing was to tow it at night behind the boat, using a long rod and fine gut tackle. In June, however, when the bass

*Small fry.



Mr Henry's
two-barbed Hook.

Baiting with Sand-
eel for Bass.

Baiting with Small Prawns
for Bass.

of that coast come inshore after sardines and anchovies, they are caught by day also, and with either of these little fish for bait. In bright and breezy weather, particularly off headlands, these fish feed close to the surf, and will take either flies or spinners, but in perfectly calm weather they must, as a rule, be looked for lower down.

Although, like its freshwater relative the perch, the bass is essentially a predatory fish, its eyesight is at times curiously defective. I remember being on one occasion much impressed by this weakness when standing on the viaduct at Barmouth, on a summer afternoon in 1903, and watching hundreds of big bass ascending the River Mawddach, obviously in order to find food, and apparently unable to see myriads of sand-eels, which were playing a very short distance from the course they took in hurrying through the arches.

Large bass do not jump out of water when hooked, like salmon or tarpon, but the shoal fish sometimes leap when playing at the surface, and the big bass often roll lazily at the surface on hot days. Large, as well as small, they are capricious feeders, though it is perhaps the exception for them to ignore a lively prawn or sand-eel put within their reach. In heavy weather, when a thunderstorm is threatening, they commonly decline any bait whatever, and it is to this condition that I attributed their reluctance to feed (in the Teign) during the eclipse of August 30, 1905, rather than to the influence of that phenomenon. The river was full of them, but I only succeeded in accidentally foul-hooking one while the eclipse was at its height.

As has already been suggested, the bass, which is alternately eagle and vulture in its appetites, now dashing among the sand-eels as fiercely as a pike among the gudgeon, now routing for rubbish under the barges, like an eel, favours a greater variety of baits than most fish. The curious and interesting fact about most of these is that each, though killing in its own particular neighbourhood, may be quite useless at a neighbouring resort. I am not prepared to say that a living sand-eel would not tempt a bass in most places, but it must be remembered that living sand-eels are not everywhere to be had. They can only, in fact, be relied on where, as at Teignmouth, a shore-seine is shot regularly throughout the summer, or where, as in parts of the Channel Islands, sufficient sand-eels can be raked any moonlight night. The process of raking them, however, is very liable to injure these delicate little fish, and those caught in the seine are always preferable for bait.

It will now be convenient, for purposes of ready reference, to append a brief list of some favourite spots for bass fishing, in alphabetical order, with the bait, or baits, most favoured at each:

Aldeburgh	Phantom minnow.
Arundel	Live roach.
Barmouth	Spinning baits.
Brighton	Fresh herring.
Brixham	Live prawn.
Clacton	Herring (night fishing only).
Dartmouth	As Brixham.
Eastbourne	Indiarubber baits.
Exmouth	Live sand-eel.
Felixstowe	Ragworm.
Folkestone	Fresh herring.
Hastings	Fresh herring.
Herne Bay	Spinning baits.
Ilfracombe	Indiarubber baits.
Littlehampton	Soft green crab.
Looe	Pilchard.
Lyme Regis	Prawn or ragworm.
Lynmouth	Squid or soft roe of herring.
Margate	Spinning baits or flies.
Mevagissey	Pilchard.
Newhaven	Prawn.
Padstow	Soft green crab or sand-eel.
Plymouth	Pilchard, spinners or flies.
Pwllheli	Sand-eel.
Ramsgate	Fresh herring.
Seaton	Squid or spinning baits.
Selsey	Prawn.
Sheringham	Hermit crab.
Shoreham	Sand-eel.
Swanage	Shrimp.
Teignmouth	Sand-eel.
Tenby	Skate's liver.

Many gaps might, no doubt, with a wider experience than mine, be filled in this list,* but a selection of more than thirty popular resorts,

*I have had good sport in Milford Haven, casting a silver-bodied salmon-fly among bass preying upon *brit.*—ED.

situated in fourteen shires, should at any rate suffice to illustrate the varied tastes of the bass, though allowance must also, no doubt, be made for the fact of the local bait being that which is most easily procured. Nor is the amazing variety of bass fishing restricted to choice of bait. Each spot has its own particular method. Thus, until the summer of 1912, it was always customary in the estuary of the Teign to drift with the tide between the yachts and the footbridge, and this method was in striking contrast with that favoured in the neighbouring estuary of the Exe, where boats used to anchor just below the pier at Exmouth. I am sorry to say, however, that this lazier method of anchoring has found its way to Teignmouth, encouraged, needless to say, by the boatmen, who are glad to earn the same pay without the trouble of rowing. This innovation is to be deprecated for two reasons. In the first place, the fleet of small boats anchored daily close to the bridge frightens the bass elsewhere. In the second, one of the boats often drops its anchor right in the fairway through the middle arch, as a result of which those who prefer the older method of drifting up the middle of the river are debarred from doing so. The plan of anchoring in so swift a tideway plays havoc with the fine tackle that it is agreeable to use, twisting up the gut in spite of swivels and, for obvious reasons, throwing a far greater strain on the gear when a heavy fish is hooked than in the case of a boat able to follow the fish in its struggles, and thereby relieve the rod and line of much of their burden.

The bass, like the grey mullet, is essentially a shore-hunting fish. Few of either kind are taken in the trawl outside the ten-mile limit, and records of their capture on hook and line at such a distance from land are still rarer. It is probable that both spend some portion of the year in deep water, but, if this is the case, they must find their asylum at such depths as to be safe from all methods of capture, and they must journey backwards and forwards without tarrying on those offshore grounds over which the trawl is always being worked like a vacuum-cleaner over a dusty carpet. The bass cannot be regarded as haunting only rocky ground, like the conger nor is it, like the sole, found only on soft ground. It seems to wander from one to the other indiscriminately, according to its mood preying on small fry off rocky headlands or on the flowing tide in estuaries, or, on days when the water is too thick for it to see its living victims, routing in the sand and mud for dead food.

Small bass, weighing up to a pound or two, are easily deceived with

moderately light tackle, and afford sport enough to satisfy beginners; but the veterans of ten pounds and upwards are best worth the attention of those who have graduated in the easier sport. On some days, for some unexplained reason, they seem to take almost any bait with such fury as to hook themselves firmly, and their capture is then a question only of tackle strong enough to hold them. As a rule, however, they are wary, and in estuaries more particularly, where it is so clear that they know every stone and post, they are very worthy adversaries. I have known large bass in the Teign display such familiarity with every buoy chain, or other obstacle likely to favour their escape, as could only have been acquired by a long stay in the river. It may even have been the result of memory from former visits to the same spot, but this we can only guess, as bass have not been marked and returned alive to betray their movements like salmon. On some days in June and July they have a tantalizing habit of remaining outside the bar altogether, even though the river may be alive with the small fry on which they feed. No explanation has been found for this behaviour, and one can only surmise that some minute marine plant or animal on which they feed hatches out on such occasions among the rocks which guard this particular estuary.

Three distinct methods, modified so as to suit local conditions, are employed in the capture of bass with rod and line. These are: drifting with the live sand-eel; whiffing with live prawn, sand-eel or artificial baits; and ground-fishing with dead bait. To these might be added a fourth, in the shape of fly-fishing from rocky headlands, in its way, no doubt, the most artistic, if not always the most successful, of them all. The bass is not, however, among the fish caught in this fashion from Filey Brigg, the headquarters of fly-fishing in our seas, for the Yorkshire coast lies north of its ordinary range, and it may safely be said that the spots on our coast at which bass have been caught on the fly (thrown in as freshwater, and not dragged behind a boat) are so few and far between that any account of the sport would be superfluous. Anyone accustomed to throwing a salmon fly would find no difficulty, and all that remains is to locate a shoal of bass within reach of either the rocks or a boat rowed close enough without frightening the fish.

The other methods must now be described at some length.

1. *Drifting with the living Sand-eel.*—Sand-eels are the natural food of a great number of larger fish, including mackerel, bass and pollack, and are therefore a deadly bait when used alive under favourable conditions.

Where nets are working, they should always be purchased of the netsmen, and a shilling's worth should suffice for the day's fishing. Taken straight out of the seine, with as little handling as possible, and removed at once to the wedge-shaped wooden bait-boxes with perforated lids, which are towed alongside the boat when fishing, they should live two days. Where there is no net to catch them, sand-eels may often be raked (with an implement more like a hoe than a rake) in the sand near low-water mark, but, being generally more or less bruised when captured in this fashion, they are less suitable for bass than for pollack, which at times will take the bait when nearly dead. Another objection to an injured, lifeless bait in estuary fishing is that it is much more likely to be draped with weed than one that is lively. This green weed finds its way into West Country estuaries by the ton, being scraped off the banks by the salmon nets, dried by the sun at ebb tide, and then carried far inland on the flood. Some days, indeed, it is such a hindrance as to put a stop to bass fishing altogether, and it is always necessary to reel in the bait at short intervals so as to see that it is free from weed, since no bass will touch a sand-eel with the least particle of weed on it. Obviously a lively sand-eel, dashing to one side or the other on its way upstream, is not so liable to catch the weed as one that drifts motionless through the water. The large green launce, which are netted along with the brown sand-eels, and which on some days preponderate, are quite useless as bait, and should be carefully kept out of the bait-box.

The best rod for this bass fishing in estuaries is one of the 10-foot rods made for sea trout. It is in two pieces. The rest of the outfit includes a bronze check reel carrying sixty or eighty yards of fine dressed silk line, a swivel, three yards of single salmon gut, and a 4/0 Limerick hook. The swivel is attached between the reel line and gut collar, and it must be kept free from weed, which quickly hampers its action. On some days a very small lead, weighing no more than a quarter of an ounce, must be used on the line, just above the swivel. On other days, I have done best without any lead whatever. There is no rule, and the only plan is to add the lead if no fish are caught without it. The depth at which the bass happen to be feeding at any given moment can be determined only by experiment. They do not always behave in the same fashion under apparently identical conditions of weather and tide. As a general rule, the shoals play in the Teign at the top of the water on calm bright days and may be traced from the bar to the bridge, above which they scatter over the shallows.

On other days, however, not a fish shows, the whereabouts of the shoal being indicated only by the movements of the gulls on the look out for a share of the meal. Still more puzzling are the days on which, with no visible evidence of either fish or birds, one catches good bass.

As already mentioned, the sand-eels are towed in a wooden box made fast to the rowlocks by a short line, and when the fish are biting freely, it is a good plan to keep a dozen baits at a time in a bucket of water in the boat. When a fresh bait is needed every few moments, this saves time. The manner of baiting is not difficult, but should be learnt from actual demonstration. The hook is passed through the lower lip, and the point is hitched lightly in the skin of the throat. Properly used, the sand-eel should last a quarter of an hour, and if it is not taken in that time, then the bass are either elsewhere or not to be caught. They are not like trout, indifferent the first time a fly is put over them, and suddenly taking it into their heads to swallow it. If the bass are in taking mood, they need no coaxing. If they are not, the fisherman might as well try to coax fish in a glass case.

The method of fishing is simple. Let us suppose that all is in readiness. It is five o'clock on a July morning in the Teign, and ninety minutes after low water, so that the river is running in with moderate strength, fast enough at any rate to carry the boat stern-first to the bridge. Some local anglers start fishing in line with the lowest tier of anchored vessels, and drift as far as the bridge. Others keep down by the lowermost vessels all the time, either paddling the boat in circles, or else tying up to one or other of the buoys and letting the bait run between the vessels, choosing, if possible, a keel covered with weed. The growing vogue of anchoring higher up the river has already been referred to. I cannot condemn it too strongly, and the one excuse for it is in the case of anyone who, for the sake of economy, dispenses with the services of a boatman and goes alone. Even so, he ought to avoid anchoring his boat in the fairway, and so impeding the movements of those who still prefer the older style of drifting.

Personally, having caught all my best bass there during the past twelve years, I always start drifting at the topmost tier of ships, or a little higher, and do all my fishing between that and the bridge, searching the same ground again and again, now on one side of the buoys, now on the other. In any case, when the boat has to be rowed downstream against the tide, so as to make another drift, time and labour are saved by cutting

diagonally across to the shallows, either close to the mudbank called Salty, or, later on the tide, alongside the permanent way of the Great Western Railway.

As soon as the boat is placed so as to drift stern-first, the fisherman, who sits facing the stern, and with his back to the man who rows, lowers his bait in the water and pulls line quietly off the reel, paying out slowly, so that the line cants away upstream. If the reel has a removable check, it is advisable to have the check on while paying out, as it has happened before now that the bait is seized by a big bass close to the boat, and this entails great risk of the reel overrunning, in which case the line would hitch, and the fisherman would be left to quote those soulful words of De Musset. . . .

Adieu! je crois qu'en cette vie
Je ne te reverrai jamais . . .

This sort of parting is anything but sweet sorrow, and should be avoided at all costs. Much of what follows, once thirty or forty yards of line have been paid out in this way, depends on the man at the oars, as much, indeed, as on the man with the rod. Our indebtedness to our gillies in all manner of fishing in boats rarely meets with its due recognition. Once a heavy fish is hooked in the tideway, I do not hesitate to say, however unpopular such a pronouncement may be, that the boatman may, if he know his work, have a greater share in its capture than the angler. Even before the bait is taken, he has to know exactly how fast to let the boat travel. If the hook goes to the bottom, there is imminent risk of its either fouling a sunken chain or catching a conger eel, and it would be difficult to say which alternative is less welcome. If he holds the boat back so as to let the bait rise to the surface, the result will probably be a blank, as it is not natural to see a sand-eel right at the top of the water, and the bass know as much. The precise length of line to pay out is a matter of taste. On the brightest days, I have had most success when fishing fully fifty yards from the boat, always assuming, of course, that there is no other boat immediately in the way. On the whole, this may be regarded as excessive, particularly as, with only sixty yards of line altogether, it leaves only ten on the reel for the first rush, and the fisherman must know the game very well indeed to run matters so fine.

A big bass rushes away with the line in no uncertain manner. The rod bends, the reel screams, and now the object of both men in the boat is to coax the bass out of the tideway and into the shallows, where it is

a far less formidable opponent than in the deep, swift water. The fisherman must keep a tight line. He must hold the point of the rod well up, so as to let it play the fish itself, and, while never attempting to check a sudden rush, he must reel in line at every possible opportunity. This give and take, which can be learnt to perfection only at the expense of much time, patience, and tackle, is, all said and done, the whole art of fishing. It is, as Leigh Hunt dyspeptically calls it, "lingering catlike cruelty." The bass would not, in this clear water, look at anything offered on tackle stouter than single gut, and any attempt at forcing the closure with such material would inevitably bring disaster. No real sportsman would unnecessarily prolong the struggle, or play with his fish as a cat plays with a mouse. Once hooked, it is to be brought to the gaff or net with all reasonable dispatch. On the other hand, dispatch which threatens to break the tackle is not reasonable. A bass of only five pounds, played in a tide as strong as that of the Teign, and with the bridge stretching across the river, making matters harder for the fisherman, and easier for the fish, will test the angler's skill, and one of ten pounds will try his tackle. A bass of the latter weight should take a good half hour in the playing. Just at the last, when the fisherman thinks he has it beaten, it is liable to cheat the net and smash the shortened line with a final rush alongside the boat. All manner of accidents happen. Twice I was agreeably disappointed after having given up my fish for lost. The first of these bass wound the gut round a buoy chain, and it was only with a very faint hope of succeeding that I bade my boatman row round the buoy in the same direction. Fortunately the plan answered, and the bass, tearing away upstream, was soon killed. The second nearly got off with the help of the weed, which, as has been pointed out, is a rare spoilsport in that estuary. On this occasion, a large piece of the weed had got foul of the line some distance above the swivel. Then a heavy bass took the hook with a rush, and after I had played it for twenty minutes or more, I suddenly became aware of the weed and of the impossibility of getting it through the rings of the rod. What was to be done? We were close to the bridge, and the tide was nearly high. There remained, however, a corner of uncovered land at the end of the bridge, beneath the toll-gate, and I contemplated, as a last chance, going ashore here and walking backwards till the bass was within reach of my man with the net. At this moment the bass took matters out of my hands and, by shaking its head, loosened the weed, which slid down the line, and saved the situation. This method of drifting for bass, as it used to

be practised in other years, was not unlike a small edition of tarpon fishing in the Florida Passes, only, with the ample room for all and sundry, the society of others was amusing, whereas, in the congested fairway of the Teign, it was the reverse. Matters were aggravated by the fact of the boatmen either not knowing the game, or not playing it. So long as the boats fish in regular rotation, with thirty or forty yards between each, there would be room for a double file, one on each side of the buoys, and that would cover as many as I have ever seen out at one time. Unfortunately the spirit of rivalry, a plague-spot of our modern life, urged the men to race for first place, rowing across the lines of others, and generally disregarding all interests, their own included. With the present fancy for anchoring close to the bridge, the sport is practically ruined, and something will have to be done in the way of a local association to regulate the procedure.

The best of the fishing is at the spring tides, with low water at about 4 a.m. or 4 p.m., and on fine afternoons the scene is about as peaceful as Piccadilly Circus at the same hour. This is one reason for giving the preference to the morning tide. It may need a little courage to rise soon after 3 a.m., but immunity from such a crowd is cheaply bought at the price of two or three hours of sleep. There are two other reasons why the early fishing is better than the late. The first is that the bass feed better, owing partly to that freshness which most fish display at daybreak, partly also to the absence of clay barges and motor launches that throng the river on summer afternoons. The other reason is that this particular estuary lies east and west, as a result of which anyone fishing upstream faces the setting sun. The sun sets over Dartmoor in July with a fiery fierceness which sends artists into transports of delight, but which evokes very different expressions of opinion from anglers dazzled by its brilliance and unable, in consequence, to keep their eyes on the rod top. Now, the rod top is a very reliable witness as to what is going on below, and it is possible, with a little practice, to learn from its movements whether the hook is fast in a fish or in weed. The morning tide, on the other hand, enables the fisherman to sit with the rising sun behind him, when all he needs is a pugaree to protect the back of his neck.

2. *Fishing from a Boat at Anchor.*—There are many spots, notably in Cornwall (e.g., Chapel Point, just west of Mevagissey) where, attracted, no doubt, by the pilchards or other offal from some neighbouring harbour, "cobbler" bass are to be found, as a rule, in the calm which follows days

of storm. At such times, when the water is thick, these bass are to be found playing and feeding on the sandflats between the rocks. There are no live sand-eels to be had at Mevagissey, and it is not even certain whether these demoralized scavengers would appreciate them even if there were. Dead pilchards, in varying stages of staleness, may, on the other hand, be had for the asking. This is not a very glorified form of sport, being, in fact, identical with the so-called "still-fishing" for tarpon, or gorge-fishing for pike, and it is legitimate only when the bass cannot be taken in more sportsmanlike fashion, with live bait, or by railing, as described below. At Mevagissey, under the lee of Chapel Point, it has a further recommendation, as the seas run high on the outer pollack grounds for several days after bad weather, and this bass ground lies in calm water and within a short sail of the quay.

In this mode of fishing the boat is moored fore and aft in a position which allows of the bait lying quite still on a sand "splat" among the rocks. The native fishermen know to an inch the exact position of every patch of rock or sand in the bay. For the matter of that, the water inside Chapel Point is so clear and so shallow that even a stranger may see them for himself by standing up in the boat. The tackle used is the same as for drifting, as no lead is required, the pilchard being heavy enough to carry the line out and keep it on the bottom. The method of baiting is somewhat peculiar and is more easily demonstrated than described. An incision is made with a sharp knife on either side of the pilchard's neck, and the head is pulled off and thrown out, for groundbait, close to the spot on which the hook is to lie. (It must be deliberately pulled, not screwed, off. In the latter case, it would come away clean, whereas the fisherman's object should be to leave some of the pilchard's inside protruding in a manner very disgusting to the fastidious eye, but doubtless alluring to a hungry bass). The hook is put through the tail-end and the gut drawn after it, and then stuck in the side, close to the neck. The operation of baiting is now completed by taking two hitches with the gut round the tail and removing the tail fin with a knife. The next stage of the proceedings is to pull twenty or thirty yards of line through the top ring, coil it on the thwart, and, standing up in the bow, pitch it, with a swinging movement, well out on the sand. The Cornish fishermen are very clever at this, swinging the bait only once round their head, and then sending the line out to its full tether, and exactly where they want it to alight. This, however, takes learning, and the beginner may think

himself lucky if he deposits the pilchard in his boatman's face instead of catching the hook in his own ear. The bait, once out, is allowed to sink slowly to the bottom, and then a little slack line is left off the reel. That is all for the present, and this is a good opportunity for lunch or a glance at the morning paper, for there is nothing more to be done until a bass takes charge of the hook. When this happens, the slack line will go stealing quietly through the rings. Now is the moment to grasp the rod, gently but firmly. When the line has run quite tight, then, and not till then, he can strike hard, and fight the bass to a finish. If the manner of hooking it leaves much to be desired, he will find all the difficulty he wants in coaxing it to the gaff, for these " cobblers " are heavy fish, few of them weighing less than ten pounds, and the fact of the boat being moored puts a heavy strain on the fine tackle. On the other hand, there is no powerful tide to help the fish, as in estuaries, and no bridge to endanger the line. In fact, it ought, as a rule, to be possible to save the fish, however large. The same method of fishing may be practised from the rocks of Chapel Point, as presently described, but on the brightest days it is necessary to keep out of sight of the fish. It is in this case even more difficult to bring a big fish within reach of the net or gaff, though familiarity with the conditions at different stages of the tide is of great assistance, and anyone strange to the locality would do well to take one of the native fishermen with him.

3. *Railing or Whiffing.*—The manner in which the bass, when in predatory mood, chases the *brit* and sand-eels at the surface of the sea has already been referred to, and advantage is taken of this habit of feeding to practise the very pleasant style of fishing known as railing or whiffing. The boat is rowed, or sailed, backwards and forwards through the shoal of bass, and the bait (which may consist of a dead sand-eel on spinning tackle, a bright spinner, indiarubber eel, or a red, green or white fly) is trailed at the end of twenty or thirty yards of line. As this manner of fishing necessarily throws a heavy strain on the tackle, particularly under sail, the very slight rod recommended for trolling in estuaries is hardly equal to the task. A salmon rod is expensive, but nothing else is equal to it, though I have caught scores of fish in this way on an old East India cane rod of London make, in three pieces, and sixteen feet when put together. I picked it up at a sale many years ago, and always wondered what it was meant for until I found a use for it. It was well balanced by a heavy bronze reel of four and a half inches diameter, which carried a hundred yards of dressed

pike line. The tackle was completed by two yards of twisted gut and two more of single salmon gut, and a small pipe lead or two could be added if necessary. The use of leads made a swivel necessary above the gut. Otherwise, the swivel was dispensed with.

When bass are chasing their food near the surface, they take the bait with a rush. There is no preliminary investigation as in the case of bait lying on the ground, no timid hesitation, no experimental nibble, but a sudden burst of speed, and the angler can only combat this by keeping hold of the rod and throwing the point well up at the first indication of a fish. If much line is out, he will do well to strike hard at the first tremor. The habit of laying the rod down in the boat is a lazy one and is sure, sooner or later, to end in trouble. It is suited to fishing at anchor, but not when the boat is moving. Equally unsportsmanlike is the practice of using more than one rod. It is no uncommon sight to see a single angler with a rod out on either quarter, but such pothunting is more appropriate to those who fish for the market, and it often brings its own punishment by leading to the loss of both fish when two of a shoal are hooked simultaneously. For such misadventure the fisherman has only his own greed to blame. Whatever may be said for or against the principle of one man, one vote, that of one man, one rod is sound policy for all.

Railing for bass is most likely to be successful off rocky headlands along the South Coast. From the Ness, at Margate, to the Rame Head, Plymouth, it is a favourite method on any suitable ground. Its popularity is, no doubt, due to the fact that it enables the fisherman to be on the move all the time, which is cooler on hot summer days than fishing at anchor, besides being less conducive to sea sickness, the penalty which deters so many from boat-fishing.

4. *Fishing from Piers, Breakwaters and Rocks.*—With the exception of a passing reference to rock-fishing in Cornwall, the capture of bass has, so far, been considered from boats only. There are, however, numerous piers, from Felixstowe, in Suffolk, to Tenby, in Pembrokeshire, from which bass of large size are caught in the summer months, either by casting artificial baits or flies (as at Herne Bay), or with natural bait (as at Felixstowe, Walton, Clacton, Hastings, etc.), according to local practice. At some of these places (e.g., Ramsgate, Newhaven, Worthing, Poole, Weymouth and Lynmouth) bass are caught from harbour works, or even from the parade, and in such cases a longer and more powerful rod is needed for the casting. The Passage Bridge,

THE "REIS" ON THE LOOK-OUT.

between Weymouth and Portland, is a favourite spot in the months of August and September. Large fish are taken here with a variety of baits, including mackerel, live shrimp, soft crab and squid. The best sport is had during spring tides, a little before high water, and very strong tackle must be used, owing to certain local difficulties in landing a big fish. Another resort of bass fishermen, which was first discovered in 1911, is the so-called Sea Wall, at Teignmouth, beside the G.W.R. line. A sand-eel is used, living or dead, and bass have been caught up to nine pounds.

Fishing for bass from the beach is practised at Aldeburgh, Folkestone, Hastings, Brighton, Selsey, Sidmouth and Budleigh Salterton, and probably elsewhere outside of my own personal experience. This beach fishing is not always easy with a rod, particularly where the shingle slopes abruptly, and it is, in fact, one of the cases in which the handline should be allowed. Float tackle may sometimes be used with advantage from piers or breakwaters, but it will meet with most success either along a river, as at Littlehampton or Lynmouth, or from the rocks, as off Brixham or Falmouth. This rock-fishing for bass, with live prawns for bait, is very artistic work, but it needs some knowledge of local conditions of tide and weather, not only for sport, but also for safety, as nothing is easier than for the angler unacquainted with these to find himself in trouble with the tide. There are some famous rocks for this fishing between Berry Head and the entrance to Dartmouth, and local experts make great catches of bass, obtaining their prawns at Brixham, where there is a store with a usually reliable supply. Unfortunately, large wrasse, up to four pounds weight, or even more, are also plentiful round these rocks, and it is a constant disappointment to the fisherman to have his float carried under by these. They give good sport for a few moments, but are quite inferior to the bass in every respect and nowhere more so than on the table. In fact, they are not palatable to any man of taste, and are best utilized as bait for the crab pots. Strong (but not coarse) tackle must be used for bass from the rocks, and an extra long handle for the landing-net will save many a fish that would otherwise be lost, besides saving the angler from the risk of overbalancing on a slippery foothold and being thrown into twenty or thirty feet of water. At first sight, this fishing from rocks, which have to be reached in small boats, may look unattractive, but, once its intricacies are mastered, it is interesting sport. A man and boat should be kept within hail in case of accident, but after the

fisherman is landed, the boat should lie at some little distance, as the water is often very clear and the bass are easily alarmed. The prawn should be hooked just above the tail. Dead prawns are of no use whatever with float tackle and should be employed only when railing.

BASS FISHING IN TURKEY

Reference was made above to the southern origin of the bass, a fish which occurs right through the Mediterranean, where I have met with it from Tangier to the quays of Smyrna. Thence it finds its way through the Dardanelles into the Sea of Marmora. I failed to identify it in the Bosphorus or in the Black Sea, but my observations were limited, and in all probability it is to be found there as well. In the Sea of Marmora, at any rate, and particularly in that beautiful arm of it, the Gulf of Ismidt, which runs between the mountains of Anatolia to the ancient city of that name, the *levrak*, as it is called by Turks and Greeks alike, reaches a great size and gives magnificent sport on the light tackle needed in those clear seas. A friend of the writer has caught them up to twenty-five pounds on fine handlines, with over forty feet of single gut, and has been broken by fish that he not unreasonably regards as much heavier. Personally, fishing with my sea trout rod and twenty-four feet of single gut (the utmost I could use with a rod of that length), I caught none heavier than seventeen pounds. Even that, however, would be a very exceptional bass to catch on the rod in England. I had others of fifteen pounds, twelve pounds, etc., all of them heavier than any I had ever caught, or seen caught, at home.

The reason why so much single gut has to be used is due to two causes: first, the fierce sun and clear water; second, the custom of using this fine gear in that part of the world. Thus generations of Greeks have spoilt generations of bass for anything coarser; and, not content with using single gut, they actually polish it, before each day's fishing, with either chamois leather or a cigarette paper, so as to smooth down any little roughness that might make it more conspicuous. There is but one local bait for bass and that is a bunch of live prawns (Greek, *carides*), which are used on a single large hook, each of them hooked through the tail. These prawns are plentiful in the weed along the shores of the Gulf of Ismidt and may be caught each day in a hand net. The largest are best for bait. Three of large size (or five smaller) are used at a time. On feeling the

A TALIAN

PLATE LVIII.

fishermen is [illegible], the boat should lie at some little distance, as the water is [illegible] clear and the bass are easily alarmed. The prawn [illegible] above the [illegible]. Dead prawns are of no use whatever with [illegible] and should be [illegible] only when railing.

BASS FISHING IN TURKEY

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least nibble from any small fish, such as *lufer*, the bait must be renewed. At any rate, the bitten prawn must be removed and another added in its place.

There is practically no tide in the Gulf, and the best time for fishing is round about sunrise. The caïque, as the small Turkish boats are called, is rowed slowly along, just outside the reeds, and the bait is trailed at the end of thirty or forty yards of line. Every few moments the line is smartly jerked so that, with the strain then taken off the line, the prawns can jump and attract any bass that may be lurking in the neighbourhood. Large bass are taken in the same way at night, but this jerking of the line is then omitted. The reason for this is that the water is highly phosphorescent on summer nights, and the sudden gleam caused by jerking the line would probably frighten the bass away.

June is the best month for the bass hereabouts, and from daybreak to 7 or 8 a.m. sees the best of the sport. Good bass are also taken after sunset, but all through the day it is too hot and too bright for fishing, There are several favourite bass grounds on both shores of the Gulf of Ismidt. All my best fish were taken off Solujak, half way between Ismidt and Derinjé. On the opposite (i.e. south) shore fine fish have also been caught at Tutun Chiflik, Cazicli and Deirmenderé. The only regular fishermen in the Gulf are Armenians. They work a large *talian*, a fixed fish trap of very ancient design, and also shoot small nets from a long boat rigged up with a high look-out perch. Standing on this, the *reis*, or captain, can follow the movements of the shoals of *palamut*, which are large mackerel, and other kinds of surface fish. Grey mullet (known as *cephali*) are very plentiful, but will not, according to all reports, take a bait. Bass are much appreciated as food on the best tables in Turkey, fetching in the fishmarkets a shilling a pound.

As will have been gathered from the foregoing pages, the bass is a fish of infinite variety, offering a wider range of sport by different methods and with different baits than perhaps any other fish in the sea. It is a plucky fighter and, if cooked in the right way in a cold mayonnaise, it is a delicious fish to eat. Its capture is therefore free from the stigma which attaches to the slaughter of tarpon, and it is a worthy foe, against which even the most skilful fisherman may safely pit himself in the certainty of having excellent value for his money.

V. POLLACK, COALFISH & SEA BREAM

By F. G. AFLALO

THESE three fish may be considered in one chapter. The first two are so closely related as to be almost identical, the coalfish being a more northern form than the pollack and to a great extent replacing it north of Yorkshire. The bream is no relation whatever to the others, but it is taken on the same rocky grounds, and this, after all, will associate it with them in the fisherman's memory more than if they had been as closely related as the pollack and whiting, which is caught on quite different ground.

I. POLLACK AND COALFISH

It will now be necessary to distinguish between these two members of the cod family, for, though the angler may not, perhaps, meet with them in the same localities,* he should be able to recognize one or the other. The pollack, which is known in the more northern waters of its range as "lythe," is at its best on the coast of Cornwall. It is also found in quantities on the west coasts of Scotland and Ireland and is essentially an ocean fish, reaching its greatest weight on the threshold of the Atlantic. On the east side of Great Britain it is smaller and less plentiful. In colour, it is of an olive shade, between brown and green, and white beneath. Large, old pollack are darker and in some cases almost black. The lower jaw protrudes beyond the upper, and there is no "beard" on the chin as in the coalfish. There are three fins on the back, and, unlike those of the bass, they are soft and without sharp spines, so that the pollack can be grasped without danger to the hands. The Cornish fishermen often remove a large pollack from the water in this fashion. They could not treat a bass so, as it is rarely played out, and its numerous sharp spines need taking into account. The extreme weight of pollack may be between twenty-five and thirty pounds, but the heaviest fish so far recorded on the rod was one of twenty-four pounds, taken many years ago by Lord St Levan.

The coalfish, on the other hand, is known to exceed a weight of thirty

*Pollack (*Gadus pollachius Linn.*) and Coalfish (*Gadus carbonarius Linn.*) are about equally plentiful in the lochs of the West Highlands, where they are known as lythe and saythe, besides many other local names in their different stages of growth.—ED.

pounds. It is very similar to the pollack in outline, but its colour is more blue-green, and there is a small "beard," as in the cod.

Both pollack and coalfish are caught on the hook in much deeper water and further from land than the bass. I have caught pollack in forty fathoms of water, and that is by no means an exceptional depth for them. There are few spots where either fish of any size is found close inshore, but the "billet" of Filey Brigg is another name for the coalfish. There are, it is true, a number of piers from which pollack are regularly caught, but only a few, like those at Deal and Dover, commonly yield big fish. All the best pollack fishing must be done from boats, either railing, driftline-fishing, or fishing with heavily leaded tackle.

Railing.—The method of fishing known as railing, or whiffing, has already been referred to in the chapter on the bass. For pollack the procedure is much the same, only this fish habitually feeds at a greater depth than the other, chasing the small fry at the surface only after sunset or even later. It is, therefore, essential that the bait should work lower down, and this may be attained in one of two ways: letting the boat move more slowly through the water, or adding more lead to the line. These conditions being constant, a greater depth may also be reached by letting out a longer line.

Like the bass, pollack take either natural or artificial bait trailed in this fashion. Among the former, mention may be made of sand-eel, rock-worm, ragworm and prawn as among the most deadly, and the tail of a freshwater eel is also used with success on some parts of the coast. The artificial baits for pollack include all manner of indiarubber "eels," tin spinners and "flies." The "fly," by the way, used for bass and pollack is not the complex and costly lure known to the salmon-fisherman. Much less is it the delicate counterfeit tied for the undoing of trout. It consists merely of a couple of large feathers, dyed red or green, or even used white, and attached to a large tinned hook with sealing wax, which forms the "head" of the fly. Anything more unnatural looking it would be hard to design, yet I have seen these flies catch scores of fish, which probably mistake them for brit. A curious bait cut from parchment is also used on Eastbourne Pier on summer evenings. It is worked rise-and-sink fashion, and resident anglers used at any rate to have great confidence in its powers, but I never saw it do any execution.

During the day the larger pollack anyway keep far down. In sixty fathoms of water, few are found less than forty below the surface. This is too deep

for railing, as it would, even with the boat going as slowly as possible, need heavier leads than the rod should be made to carry. The best ground, therefore, is in ten or fifteen fathoms of water and always over a rocky bottom. Railing is, as a rule, quite useless over sand. Great care must be taken to keep clear of the crab pots and their cork buoys, as these generally lie thick on the best pollack ground, and if the hook gets foul of the buoy line when the boat is going fast through the water, something is almost certain to break, and it will not be the buoy line. Large pollack are, moreover, quite equal to the advantage of dashing round the buoy lines as soon as they are hooked. They must be restrained from such tricks, as well as from their favourite tactics of diving headlong to the bottom and fraying the gut collar against the rocks. There is, in fact, only one manner of fighting a pollack, as a rule, and that is to bully it. Not one fathom of line must be yielded, save under protest. This implies perfect confidence in the tackle throughout its length, for, as the military engineering textbooks say, the weakest point in the defence is the strongest. The pollack is most dangerous deep down among its native rocks. Once clear of these, it gives up the struggle comparatively easily. The counsel to keep the fish clear of the rocks needs passing modification in view of an alternative policy, which used to be practised with great success by a friend of mine on the big pollack of Bolt Tail, near Salcombe. He used to scull out to the pollack grounds by himself and fish with light driftlines, and, so far from attempting to check the pollack's downward rush, he would give the fish its head. His argument was that, with the fish well hooked, these antics among the rocks mattered little so long as the line was not tight enough to be severed by the mussels or limpets, and that, after the first frenzied plunge, the pollack would generally allow itself to be coaxed from its retreat and could then be handlined to the gaff. The results certainly warranted this departure from the commoner practice, but he had made a long and careful study of his own method and was exceptionally clever at it. In ordinary cases, the pollack should undoubtedly be coerced from the start.

The Driftline.—The driftline is a deadly method of taking pollack, particularly on the Cornish coast, where these fish run large anywhere between five and ten miles from land. It differs entirely from the aforementioned drifting for bass in Devonshire estuaries, for the boat is at anchor and no lead is used. A single large hook is baited with half a pilchard, or with a long strip of pilchard and another of mackerel, both showing the silvery skin,

and is allowed to drift with the tide at the end of thirty or forty yards of line. As pollack, like most fish, feed with their heads towards the tide, this may be compared with downstream fishing in a river. The handline is generally used for this fishing, and if one only is used it should be kept in the hand, so as to strike at the least bite. The fishermen, however, use two or three lines, each being made fast to the boat and some slack being hitched round a large cork. When a pollack runs off with the bait it pulls the cork over the side and thus attracts the fisherman's attention. If a rod is used, it may be laid down with the check on the reel, as these large pollack most often hook themselves. The pollack has only one idea, to bore to the bottom as soon as possible. Down it goes, straight as an arrow. Occasionally, when hooked in railing, it sheers nearer the surface, like a bass, but this is probably the result of resistance to the horizontal pull on the line and is against the pollack's almost invariable rule of sounding. The first rush of a ten or fifteen pound pollack is very agreeable. Unfortunately it soon gives up the fight, and I have brought fish of that weight to the gaff within ten minutes, whereas a bass would take three times as long. Only comparatively calm days are suited to the driftline, if only because anchoring off the Cornish coast in breezy weather is anything but comfortable, even if one has no fear of being sick.

Ground Lines.—In applying the name of ground line to one with a heavy lead, it is necessary to explain that the pollack is not caught, like conger, actually at the bottom, but several fathoms from it. Whether using a handline or a rod, the fisherman should keep hold of his tackle and strike at once, as a pollack is less likely to hook itself, and more likely to go free with the bait, on a leaded line hanging plumb than on one drifting without lead. The pattern of lead used for this fishing in the west country is peculiar, but it is the outcome of long experience and is particularly suited to fishing with several lines from the same boat, as it reduces the risk of each fouling its neighbours. The lead is roughly shaped like a boat, with a short length of stiff cord soldered to each end. To one of these cords the reel (or hand) line is hitched and it is then attached to the other, with a little slack between. It is sheer impossibility to explain this attachment in so many words, but it may be learnt on the spot in five minutes. A little longer will go to acquisition of the one and only way of throwing out the lead, as there are a score of wrong ways, any one of which means entanglement. The hooks have to be thrown clear first and the lead then pitched against

the tide. Lastly, the line must be allowed to run out slowly and neither checked nor thrown overboard in coils. Visitors to Cornwall have sometimes been prejudiced against these leads because their proper use has to be learnt, but they are the best for the purpose, particularly, as already explained, where several lines are used from the same boat.

The pollack must be played on this tackle as on the driftline. As has been said, the ordinary way is to fight it inch by inch. An alternative plan of giving the fish its head, with plenty of slack line, has also been described. Either is likely to answer, but anything in the nature of compromise between the two, that is to say allowing the fish to reach the rocks and keeping a tight line on it as well, is sure to end in disaster, as the pollack will merely cut the line against the edges of the mussel shells which decorate the front door of its retreat.

Pollack, which are northern fish, are caught all along the Atlantic coast of the northern states of America. In the bays of Cape Breton Island and elsewhere in Nova Scotia, they run up to twenty pounds and are to be caught by railing with red flies or indiarubber baits. Mr Ross, famous as the captor of the first Canadian tuna on rod and line (an exploit fully described elsewhere in these pages) used to hook them from his boat close to the lighthouse in St Ann Bay and then land on the beach and play them from the shore. They averaged sixteen pounds, and smaller pollack are rarely seen in those waters. The best of this sport was during the first half of July. In August the fish go to the bottom and no longer take artificial bait. They are then said to take mussel freely.

BREAM.

The sea breams, red or black, furnish some of the best fishing in the sea. With us, it is true, they run to no great weight. A bream of four pounds makes a good fight on a light driftline, and that is the most that can be expected even down in Cornwall, where (as also at times off the Sussex coast) these fish are at their best. More often one catches "ballard," the name given by the Cornish fishermen to half-grown bream of a pound or two, and more commonly still innumerable "chad," or baby bream, whose multitudinous rabble are the vermin of the pollack grounds, rivalling even the squid in the maddening persistence with which they nibble and suck at the bait until it is useless. Fortunately these chad are an excellent bait for big pollack, being not only bright and attractive, but also so tough

that, unlike the softer bait of pilchard, it is difficult to remove from the hook without paying the penalty. The other chad, though cannibals, can make little impression on it. The first chad caught should therefore be beheaded and cut in half and the backbone removed. This produces two admirable baits.

As a general rule, the red breams, some of which grow, like the Australian snapper, to a great size, are found in moderately deep water on rocky ground, whereas the black kinds haunt piers and quays. All bream bite best at night, though the snapper and "black brim" of Australia are both fished for in daylight.

Our own sea bream may be taken on pollack tackle, and on the same grounds, either with the driftline or on the ground line. I never heard of one taken while railing, and it is doubtful whether these fish, which are heavily built and of somewhat sluggish habits, would move fast enough through the water to be caught in this way. They commonly feed near the bottom, but I have had very fine bream on a driftline streaming away close to the surface, and such a fish will fight much more lustily than a pollack of the same weight. As with the bass, however, care must be taken in handling bream, as the fins are prickly, and even those of chad can inflict a nasty wound. All manner of baits will catch bream, and among them pilchard, herring, mackerel and sand-eels are in general use, as well as mussel and lugworm.

Of all red bream, the two most famous are the snapper of Australia and the *merjan* (i.e., coral fish) of the Sea of Marmora. The latter is probably found throughout the Mediterranean, but I know it personally only off Pendik. The snapper (which Australians usually pronounce *schnapper*) is caught from steamers which, with steam shut off, are allowed to drift broadside over sunken reefs in moderately deep water. There used to be famous snapper grounds off Sydney Harbour, both north and south, and it is usual for parties of eight or ten to charter a tug, leaving the Circular Quay at midnight so as to fish at daybreak. The best of the fishing is during the Australian winter, that is to say from April until September, but the fishing is no longer what it was twenty years ago. The bait consists of mackerel, squid and yellowtail. These yellowtail are not the big game fish of Catalina, referred to in another chapter, but little mackerel-shaped fellows of a pound or two. Grey mullet is also a capital all-round bait. It is, in fact, too attractive, particularly to sharks, and is therefore used as little as possible, for the sharks of Australian seas are not the mild

nuisance that we occasionally have to put up with at home, but a terrible scourge, swarming round the boat in such ravenous hordes as at times put a stop to fishing altogether. Handlines, with heavy leads, are used for snapper fishing. Loyal to the ideals of the British Sea Anglers' Society, I did try a rod on my first outing, only to demonstrate beyond all doubt that the natives knew best and that a rod was quite out of place when drifting rapidly over rough ground in fifteen or twenty fathoms of water. The snapper rushes off with the bait in splendid fashion, and fights doggedly all the way, and it is best, as in all handline fishing, to let the gunwale of the boat bear the brunt of the struggle. The fish, moreover, is much less likely to break away than if the hands are held out over the side. Most of the fish taken on the snapper grounds are good fighters. The best, after the coveted snapper itself, are the silvery *morwong* and many-hued sergeant-baker. The last was presumably named after some N.C. officer of other days, and Bermuda has its sergeant-major, a title of probably analogous origin. A few of the Australian fish are only caught of small size, like the crimson *nannygai*. Yet the *nannygai* is always welcomed on its first appearance, for it is known to feed in company with snapper, and the better fish is not, as a rule, very far off. All other fish, however, no matter how well they fight, are hailed with a shout of derision and dubbed "wrong colour." This fishing is very hard work, as the baits are frequently removed by fish too quick for the fisherman, and the line must be hauled in and quickly baited again. The steamer is put at right angles to the shore and allowed to drift north or south, as the case may be, and she takes a heavy list owing to the fact that all the party necessarily fish over the same quarter, with their lines streaming away from the side.

On the same coast, though amid very different scenery, the black bream attracts a select brotherhood who make a speciality of this fishing, and take themselves as seriously as chalk stream anglers at home. The Australian black bream is a fish of more restful haunts and more fastidious appetite than its red cousin. It is found in the silent creeks of Como, Botany Bay, and elsewhere, and the manner of catching it is peculiar and interesting. There is no reason in this case why a light rod and minute float should not be used, but Australians have acquired extraordinary skill with their fine handlines, and would probably refuse the alternative of a rod. Their lines are of very fine silk twist, with a yard or two of single gut and a small sharp hook baited with a peeled prawn. A fragment of lead weighing an ounce, and no more, is pinched on the gut some way

from the hook, and the tackle is wound on a cork. Summer is the season for this fishing, though I saw many good black bream (locally called "brim") taken in the winter months of that upside-down land. An important feature of the proceedings, which are conducted in solemn silence, is the offensive groundbait known as "berley," which, curiously enough, is almost identical in composition with that used by the Greek fishermen of Asia Minor when fishing for *sargos*—black bream closely resembling those of Australia. It is possible, indeed, that the compound was taken to the South Seas by some Levantine emigrant from the Eastern Mediterranean. As brewed in Australia, berley for black bream includes condemned tinned salmon, sour herrings, and the cheapest of cheese. (The cheapest cheese obtainable in Australia is something to be handled with respect, yet I have seen Australian enthusiasts dip their hands in the berley as if it were a potpourri of rose leaves). Sufficient bran is incorporated with these disgusting ingredients to give the whole the firmness of a cold pudding, and the smell of the mess is simply indescribable. It may be used in either of two ways. A ball of it may be pinched over the lead, or it may be dropped quietly in the water close to the line. Every care is taken not to disturb the water, as black bream are easily alarmed. The boat is paddled very gently to some promising spot near the rocks, and is so moored that it may lie quiet at the edge of the long grass in which the bream lie during the heat of the day. When the baited hook has sunk to the bottom, all slack line is taken in, and the fisherman grasps the line between his finger and thumb, which he is even said to rub with pumice stone so as to make them more sensitive, as the largest bream bite most gently. He strikes at the slightest bite, and the exact moment at which to strike has to be learnt. Personally I should have preferred the help of a very small float, but I was assured that so unusual an apparition would have scared all the bream in the neighbourhood. I formed my own opinion as to the likelihood of such a result; but I could not do anything calculated to annoy those who had taken the trouble to introduce me to the mysteries of their art. A fish that is often caught while fishing for black bream is the flathead, an ugly brute, with a head not unlike the gurnard's, but a good fighter on such light tackle and very fair eating.

The habit of black bream in frequenting quays and breakwaters has already been referred to, and these give excellent sport on a light rod in many parts of the world. To this group belongs the sheepshead, of

Florida, which is caught with a fiddler-crab for bait, as described in the chapter on tarpon fishing. Another black bream is caught from the breakwater at Bermuda on very fine tackle, and the bait is a piece of potato. Yet another, which gives capital sport, particularly at night, throughout the Mediterranean, is what the Greeks of Asia Minor call *sargos*. I first caught this fish at night in the year 1891, off the Molo Nuovo, at Leghorn, and again at Derinjé, in the Gulf of Ismidt, nearly twenty years later, while we used also to catch it from the rocks on the Ilheo de Cima, some forty miles from Madeira. In the Gulf of Ismidt, my Greek fisherman used a liquid "groundbait" very like the berley of Australian memories, only compounded chiefly of stale cheese and fish, with plenty of water, and baled out as sparingly as if it had been old Tokay. As in Australia, the bait was a prawn, and the nervousness of the fish was also assumed, as I was forbidden even to smoke an after-dinner cigar, for fear lest the gleam should frighten the *sargos* away. When hooked, these fish fight madly to get among the piles of the quay, and, in the pitch darkness, it is no easy matter to keep them clear, though a rod is certainly of great assistance. I was at first inclined to disbelieve my Greek when he assured me that they would not take a bait during the day, but conviction was borne upon me after I had seen over a dozen, some of large size, swim round and round my bait one hot morning without looking at it. On the other hand, in the deeper water round the Ilheo de Cima these fish feed all through the day, and we used to groundbait with a mixture of crabs and sweet potatoes, baiting with a crab's leg. These crabs were very active, and became so accustomed to our raids among the rocks that they were quick to escape, and had eventually to be shot individually with a small bore rifle, one of the most singular methods of procuring bait in all my experience.

The finest bream of my acquaintance is the red *merjan* of the Sea of Marmora. It grows certainly to a weight of twenty-five pounds, and probably even heavier. There is, in all the Sea of Marmora, only one spot that I know of where the *merjan* is regularly caught every summer, and that is round a particular submerged rock a mile or two off the Greek village of Pendik. The exact whereabouts of the rock is known only to old Yanni, the father of my gillie during my stay in that part of Turkey. He discovered it many years ago, and has since regarded it as his own private preserve, and as he is held in respect, not unmixed with terror, by his neighbours, no one is likely to dispute his monopoly. He certainly

FISHING FOR MERJAN.

spends much time and money on baiting it all through June with bushels of dead crabs for the sake of the July fishing, the first moon of that month being the best in all the year. Only moonlight nights avail, and the fishing is very interesting. Very large *merjan* are not, however, as plentiful as they were, and the largest fish I saw weighed only fourteen pounds.

The tackle is a horsehair line, combining strength and elasticity, with an immense *zokka* hook, i.e., one with a bright lead soldered on the shank. This is baited with half a dozen crabs, the claws and legs of which have been removed, and the bait must just rest on the bottom. Yanni leaves Pendik an hour before daylight fails, as he cannot pick up the rock accurately enough in the dark. Having got his bearings, he throws out an anchor, with a petroleum tin as buoy to mark the spot, and then rows around till the moon rises. While he is fishing, the boat is not anchored, but is kept on the spot by the boatman, who has to know his work. The first nibble of the *merjan* is disregarded. Not until the fisherman feels the big bream running off with the hook does he strike, and then he has to handle each heavy fish carefully on such comparatively light tackle.

VI. THE GREY MULLET

By F. G. AFLALO

THOSE who regard the grey mullet as the saltwater roach are not far wide of the mark. That its capture is commonly associated with that of the bass arises, not from any resemblance in the feeding or habits of the two fishes, but from their undoubted preference for similar sheltered waters. They are, in fact, found together in many harbours, such as those of Ramsgate, Southampton, Poole and Plymouth. The mullet is not, however, a fierce pirate like the bass, and is not, therefore, to be looked for in the surf off rocky headlands, or to be caught with spinning baits trailed over the wave crests. It is a quiet, browsing fish, sheep rather than wolf, though once it feels the hook it fights desperately and with much resource, taxing all the fisherman's skill in keeping it clear of posts and other obstacles which offer it a chance of freedom. Hence it is a most attractive fish to those who love quiet sport, not unlike that enjoyed on Thames or Trent, and, while even more difficult to deceive than the bass, it is no less determined in its fight for liberty.

The grey mullet is wholly distinct, in habits as in appearance, from the red, and it is, in fact, only in this country that they share a common name, which appears to have been made to do duty for the Latin words *mugil* and *mullus*. Readers of Juvenal's satires will remember the distinction, particularly the reference to a curious judicial use of the former.

The mullet is a fish of world-wide range, particularly in warm seas. I have met it in waters as far apart as those of England, Asia Minor, Australia, Florida, Morocco, and the Gulf of Aden. Though a warm water fish at its best, it occurs as far north as Norway, and as far south as the Cape of Good Hope. There are, according to ichthyologists, more than one hundred different species, of which three are to be found in our seas, but for all practical purposes of angling, a grey mullet is a grey mullet and nothing more. In appearance, the typical mullet is a handsome silvery fish, with conspicuous fins on the back and a deeply-forked tail. Its nearest relative in our seas is the atherine, or sand-smelt. It grows to a length of three or four feet, and to a weight of ten pounds or so in the Mediterranean, but in the Persian Gulf it is said to double these figures. I have no first-hand acquaintance with the fish in that region.

Throughout the Mediterranean, the grey mullet, like the red, is an important fish, and it is a great favourite with such native anglers as love to spend their summer dangling bamboo rods of great length over quays and parapets, content if, once an hour, they can swing a mullet overhead, landing it, as often as not, among the audience, which is usually large, since for every lazy fisherman in these countries there are generally a score of still more lazy onlookers. Spaniards, Provençals, Italians, Greeks and Turks all love to catch the mullet, and fishermen may be seen lining every quay from Marseilles to Smyrna. Ordinarily speaking, it is a fish of shy habits, easily scared; but that there can be exceptions to this rule is demonstrated by the fact of my having on one occasion caught a brace from a steamer off Mogador Island, on the coast of Morocco, at the moment when the anchor was being taken up and there was great turmoil with shore boats.

Small mullet, like bass, go in shoals, and the sociable habit seems to survive until advanced years bring a preference for solitude. Even the largest fish are commonly found in couples. When a shoal is enclosed in a seine, care has to be taken lest one fish escape over the ropes, else the remainder are safe to follow, like sheep going through a gap in a hedge. The fishermen in most countries cherish the belief that the leader is a veteran; but on two occasions, once in Cornwall, and once in Asiatic Turkey, I saw a small fish deliberately lead the way, and on the latter occasion, indeed, there was not an old fish in the catch. Among its other peculiarities, the grey mullet is frightened of shadows, and this weakness is turned to account by the Greeks of the Levant. They stitch together a number of light fibre mats, and these are spread on the water, any bright moonlight night, just outside a shoal that has been seen playing in the shallows. Men hold it at the four corners and gradually draw it towards the land, and it is a fact that, rather than swim to safety through the shadow cast by the mats, the mullet prefer to be stranded in an inch or two of water, in which position they are easily flung ashore. Though capable of varied tactics when hooked, the mullet's nerve seems to desert it in the nets, for it is well known that a second seine shot outside the first effectually bars retreat, as the fish never try jumping over the ropes a second time. Finding themselves prisoners still, they give it up as a bad job.

To the angler, however, the mullet does not often show any such limitations, being equally difficult to deceive, and, when hooked, to coax within

reach of the landing net; a problem complicated by the fact that it has a tender mouth, likely to give way under sudden strain.

I suppose ninety-nine mullet out of every hundred taken on the rod are angled for in harbours or backwaters, though one of the best spots for this fish on the whole of the English coast is in open water, under the Margate Jetty. As a rule, however, it is in sheltered corners that the fisherman seeks his mullet. The harbour works at the mouth of the river Arun are a compromise between the two, for, with the wind offshore, the fish are taken in moderately disturbed water. The tackle used here, at Littlehampton, is a rod and paternoster, and the bait is ragworm, procured from Ford, a little way up the river. The mullet come into the estuary some time in May and remain until the early part of October. They are fished for on the rising tide, at daybreak and in the neap tides, either from the beacon itself or from a small boat moored close to it. A few are also caught from the quays, and there is, or was, a favourite spot for mullet at the upper ferry.

Another good place for mullet fishing is the Passage Bridge, at Weymouth, and the bait favoured locally is boiled macaroni, a little of which is from time to time thrown on the water to bring the fish round the hook.

The method of fishing at Margate deserves somewhat more detailed description, and is of peculiar interest. For many years large mullet were known to visit the jetty each summer, attracted, no doubt, by the regular supplies of potato skins, green peas, and other waste from the restaurant above. Though their natural food consists of shrimps and worms (found, at Margate, in the soft "ross" alongshore), mullet need little encouragement to turn scavengers, and such is their habit here. A few were from time to time caught in the harbour with rod and line; but, as this runs dry at low tide, fishing operations were necessarily restricted. Then a number of resident anglers took to the jetty, where there was enough water at all tides, and mullet were caught in increasing numbers from the steps, though many were lost by being lifted so high out of the water. It remained for Mr T. W. Gomm, who had had long experience of Thames methods, to introduce a style of fishing hitherto regarded as suited to roach and bream rather than to sea fish. He proceeded, in fact, to catch these Margate mullet from a boat moored across the tide, just as a punt would be moored across the river, and used similar tackle: a ten-feet rod of hollow cane, with large upright rings; a fine silk line dressed with boiled vaseline; a large Nottingham reel; a slider-float;

a long collar of single gut sufficiently shotted; and a single No. 3 crystal hook. A slider-float is one capable of running down the line as far as the shot above the hook, its progress in the opposite direction being checked by a bristle (or by part of an indiarubber band) fixed across the line for the purpose. This can be shifted higher or lower, so as to vary the depth of the bait below the float, according to the stage of the tide. The bait used at Margate is clean, firm paste, and groundbait is used, as in pond or river fishing, consisting of bran and barley meal kneaded in large lumps. One of these is gently dropped in the water before the rods are put together, and others at intervals, whenever the fish are backward in biting, care being taken not to feed them too generously with the groundbait. The depth of the water is carefully plumbed from time to time, and the float is so adjusted on the line that the hook may drift three or four inches off the bottom. The float travels away from the boat with the tide, and is abruptly checked just before reaching the posts opposite. This loosens the paste on the hook, and means a fresh bait at every cast, but this is regarded as an advantage, since the lost bait helps, with the groundbait, to keep the mullet together.

The first indication of a bite is that faint, scarcely perceptible, quiver of the float familiar to the roach-fisherman. Then, of a sudden, it goes under, but only for a moment. That is the moment to strike, otherwise the mullet is gone, and pricking two or three fish will sometimes frighten the remainder of the shoal away, though, curiously enough, the disturbance due to playing a large fish to the landing net does not apparently have the same result. When a big mullet is hooked, it bores in circles and makes frantic efforts to get the line round the posts, from which, short of breaking the tackle, no effort must be spared to restrain it. A tight line must be kept on it, and it must be coaxed gently, but firmly, to the long-handled landing net which the boatman has in readiness. The weather regarded as most favourable to a good catch is a dead calm, but I have, under Mr Gomm's guidance, caught mullet with a boisterous south-west wind blowing. The hour of daybreak is most enjoyable for this fishing, and between then and breakfast time some of the best mullet are taken. There is good fishing also on the afternoon and evening tide, so far as the mullet go, but there is also a good deal of humanity on the jetty, and it does not, unfortunately, behave with the repose of Vere de Vere. The "contemplative man" will therefore do wisely in staying away.

Only two baits have, so far, been recommended for mullet. Others, however, are used with success elsewhere. In the Channel Islands, they fish with shrimp, using pounded shrimps (or " chervin ") for groundbait. In Italy, we used a paste made of sardines and Parmesan cheese, a small piece of the latter being pinched on the float, and proving very attractive by gradually crumbling in a shower round the hook. Now and then, indeed, the mullet, though rarely a fish-eater, is to be caught on fish baits. I heard of one case in Ireland (I fancy it was at the famous Ballycotton); and a piece of sardine, with pounded sardines for groundbait, is invariably used, with float tackle, at St Jean de Luz, near Bayonne, where I have seen fine mullet caught in this way.

VII. THE MACKEREL

By F. G. AFLALO

YACHTING folk who, during summer time, look on sea fishing as merely a relief from the boredom of idleness, always remind one of those hunting men (and women) who, at the other end of the year, regard foxhunting as a pretext for a gallop. Just as these care nothing for the intricacies of hound work, so those are left cold by improvements in tackle and the discovery of new methods. With these fair-weather fishermen, as with many more to whom an hour's fishing lends interest to a sail that they do not enjoy for its own sake, the mackerel stands for the best fish in the sea. It is the easiest to catch. It can be caught while sailing along, and without the sometimes distressful need of anchoring in a lively sea. It is so plentiful that a blank day is unheard of. When grilled soon after capture, it is exceedingly good to eat. It is, to chronicle yet another of its many virtues, one of the best baits obtainable for all kinds of sea fishing, and only a very few kinds of fish, such as the red and grey mullet, refuse it.

All these considerations recommend the mackerel, but perhaps the chief cause of its popularity as a summer-holiday fish is that its nature is so guileless as to put the veriest novice and the most hardened veteran on the same footing. The expert may perchance grumble that the spoils are too easily won, but he is in the minority. This really beautiful little fish, in short, takes high rank with those who put the joy of fishing before its science, and some, indeed, never attempt to catch any other kind.

The mackerel is among the most determined fighters in our seas. If it were only fought on trout tackle, which is nicely adapted to its size and weight, it would give excellent sport. Fished for with the thick lines and heavy leads of the ordinary mackerel boat, it offers merely feeble resistance, quite inadequate to the brute force arrayed against it. The ordinary way of catching mackerel is, in fact, a coarse and clumsy form of the method already described as railing, and for anyone anxious to catch the greatest possible number of mackerel in the least possible time, it leaves nothing to be desired. One boat, with half a dozen lines out, may, on a good day, return with three or four hundred mackerel in a tide. Yet what, after all, is one to do with three or four hundred mackerel ?

True, they can be sold, but I am not addressing these remarks to fishmongers. Better, perhaps, they can be given to the boatman to sell on his own account, but he should be sufficiently paid without such perquisite. A brief account of this ungainly style of murdering a sporting little fish must be given, and something will then be said of more sportsmanlike alternatives. True, the angler will catch fewer mackerel, but, since he is fishing for fun and not for profit, he should enjoy catching each infinitely more. The difference between these methods is not less than that between ordinary lake fishing for trout and the Swiss manner of butchering them in the Lake of Geneva on wire handlines armed with spoonbaits.

The mackerel is so familiar a fish that we are apt to miss the beauty of it as we do with other everyday objects. Yet for symmetry of outline or gaiety of colouring it has few equals in its own class, and its speed and gracefulness on the water are above praise. To appreciate the swimming powers of this fish, they should not be judged from the lethargic movements of the planetary mackerel that swim round and round the tank of an aquarium, but should be studied in the sea. There are sunny August days off Mevagissey on which I have watched hundreds of large mackerel darting in every direction, two or three fathoms below the surface, and gorging on brit and other small and helpless victims. Then it is that one realizes the predatory nature of the mackerel and the elegant lines on which it is modelled for high speed. If it only grew to ten or fifteen pounds in weight, few would need to go to America for their sea fishing, and a mackerel of a pound will give as good a display on trout tackle as a pollack of ten times the weight on the type of rod and line commonly used for its capture.

The success of railing for mackerel rests on the habit which these fish have, particularly in the summer months, of chasing their food close to the surface of the sea, where they dash with great fury after the sandeels and other fry. How many miles an hour a shoal of mackerel may cover the distance I know not, but they swim fast enough to keep pace with a boat sailing in a stiff breeze; and when mackerel are in this mood, any small bright object trailed in front of them is almost sure to be taken. Even if the man holding the line forgets to strike, the fish is, as a rule, automatically hooked, so that, as will be seen, the element of skill is wholly wanting, and he will catch the most fish, other conditions being equal, who is quickest to haul in his line, remove the fish from the hook, and send the bait astern again. This is exercise, but it is not skill.

Once, however, the simplicity of such fishing is recognized, it is entitled to respect as an exhilarating pastime which, as has been pointed out, invests a sail with an interest otherwise lacking.

Any number of lines can be used, up to six or eight, the number depending merely on the accommodation on board and on the appetite of the party for wholesale slaughter. The least unsportsmanlike method is to use three, one on each quarter, and a lighter one over the stern. These can be fished by three occupants, one line for each; but in boats specially fitted out for "plummeting" (as it is called in Cornwall) there is a projecting boom on either quarter, and with each of these two lines can be kept clear of the rest and of each other. In the case of only three lines, the length of line and weight of lead must be carefully adjusted so as to avoid entanglement, and the guiding principle is that the heaviest lines go nearest the bow, and the lightest and longest line goes over the stern. The distance between the hook and the lead is also somewhat varied so as further to obviate one line fouling the rest. The correct manner of fishing is to use five lines, two on either quarter and one over the stern. The lead used in Cornwall for "plummeting" is just a pyramid, having at its apex a short length of tarred cord carrying a loop at one end. The handline is made fast to the loop, and the fine line, with the hook, is hitched round the other end.

The best of all baits for this fishing is a small pear-shaped piece cut from the side of the mackerel's tail. Each fish therefore furnishes just two baits, and no more. This particular bait is in general use, and is known as a "float" in Devonshire, as a "snade" in Cornwall, and as a "last," or "laske," in Kent and Sussex. Simple as the cutting of the bait looks, there is a right way of doing it, and the knife must be very keen, so as to run just under the bright skin, without including too much of the flesh. The hook is best baited by laying the bait flat on a cork, then pushing the point of the hook through the pointed end and, with the aid of a loop of the gut or line, pushing the bait well down on the bend of the hook. The "float" varies in size on different parts of the coast, but one of two inches in length will be found useful. Its removal does not appreciably injure the mackerel, and scores of the fish are sold in the market from which baits have been cut in this way. The fisherman has, however, to catch his mackerel before he can cut baits from it, and the first fish of the day can usually be caught on one or other of the bright tin spinners, or "flies," sold by seaside ironmongers for the purpose. These artificial

substitutes are not, as a rule, to be compared with the natural bait, and they should therefore be used only in emergency.

Such art as there is in this "plummeting"—and it is very modest—consists in keeping hold of the line and hauling each fish as soon as it is hooked. Ladies (as well as town-bred men with soft hands) should use a wooden toggle on the line, as by doing so they will save themselves many a blister. Failing this, a handkerchief may be wrapped around the line, though, in the excitement of catching a fish, it will probably go overboard. The critical moment, in which many a big mackerel is lost, is that of swinging the fish over the side. Mackerel fight desperately for their size, sheering wildly right and left, and the secret of saving the fish lies in waiting until it is actually swimming towards the boat and then, with a sudden jerk, lifting it over the gunwale. Any attempt to lift it on single gut when it is swimming in the opposite direction will probably bring disaster. The Cornish fishermen keep the line moving backwards and forwards. This makes fishing much more tiring work, and is not strictly necessary, but it has the twofold advantage of making the bait more lifelike and attractive, and of hooking many a fish that might otherwise go free. Each fish should be knocked on the head with the blunt edge of the knife as it is removed from the hook. This not only puts it out of its misery, but also prevents its damaging itself in its death dance. It should then be thrown out of the way, either into the boat's well or into a basket. It is not only objectionable to have dead fish lying about in the boat, but it may also be dangerous, since nothing is much easier than to step on one and tumble over the side.

Two disasters commonly occur in this style of mackerel fishing. The first is when a big pollack is attracted by the gleaming bait, and seizes it, only to carry away fine tackle never intended for a fish of such weight. The second, which is of more frequent occurrence, is when the hook gets foul of the cork or buoy-line of a lobster-pot. When the tide is slack, the corks show conspicuously at the surface of the sea, and may be avoided by careful steering, but when, at high water, they are carried under, there is nothing to mark their whereabouts, and smashes are of daily occurrence.

Anyone, then, who wants to catch the greatest possible number of mackerel in the least possible time should, as has been said, go plummeting in the manner described above.

Better, however, for the sportsman who does not want quantity, is

an old trout-rod, with three yards of single gut, a two-ounce lead, and a single hook baited as above. The boat should be rowed, not sailed. If the mackerel are feeding lower down, as they commonly do after the middle of August, the boat may be anchored, for the shoals are no longer moving up and down the coast as they did earlier in the summer, but the fish are more generally distributed and less restless. A little ground-bait may be used with advantage in keeping them round the boat. The most effective ground-baiting for mackerel in all my experience is that practised by the Portuguese and half-caste fishermen at Madeira. All through the summer a little fleet of open boats gathers just before sunset off the headland crowned by the hotel, and no sooner are the anchors down than a great din of hammering comes over the water, caused by many choppers falling on slabs of tunny and cutting them to mincemeat for bait. This is next thrown into the water by the handful, and the fishermen declare that the noise made by the chopping is part of the attraction, calling the mackerel to table, in fact, like the "hash-hammer" of the American maiden in "Punch." Whether or not this is the case, I am unable to say, but, if negative evidence goes for anything, I am bound to admit that very few mackerel came round my boat when I left the shore with the bait ready cut up. Habit may become second nature, even in the sea, and the Madeira mackerel may have learnt to gather to the feast at the bidding of that sunset tocsin. In much the same manner, the Arabs, fishing for *cavalli* off Zanzibar, first attract the attention of the fish by splashing their hands in the water, and then throw several live fish overboard, one of them with a hook through its lips. The *cavalli*, which are distantly related to the mackerel, run up to a weight of ten pounds, and are determined fighters.

The tackle used by these mackerel-fishermen at Madeira is peculiar. It consists of a light cane rod, having neither reel nor rings, and carrying a short, fine line with a single hook. In the twilight that comes after the sun is behind the hills, the mackerel do not feed right at the top of the water, but keep a fathom or two below, and the natives actually hold their rods under water, pointing them vertically downward to reach the required depth. This manner of fishing, with the entire rod immersed, is by no means easy at first, but the fish cannot be caught, at any rate on the native rods, in the ordinary way until darkness falls on the sea, when the mackerel take the bait at the surface, and the rod may be held in the ordinary position.

There is one other style of catching mackerel which calls for passing mention, and that is with rod and float tackle off piers and breakwaters when, in the autumn months, the fish come close enough inshore. A slider float (as described for catching grey mullet) may be an advantage if the fish are feeding deep, as they do on some days, but is not usually necessary. Various baits are used with success. The " float " is as good as any, but there are times when a very small living sand-eel gives better results, and even a mussel is readily taken. It may be found necessary to let the float travel twenty or thirty yards away from the pier with the tide before the mackerel will take it under, and some difficulty will then be found in striking such quick fish. This is, however, a matter of practice, and in any case the line between the float and rod top should be kept as tight as possible. As the pull from such a height overhead is a great strain on the fish, it yields much less sport, and gives in much sooner, than when caught from the lower level of a boat. For the same reason the angler should tire the mackerel out before attempting to lift it out of the water, as a single kick in mid-air is likely to break the light tackle.

Large mackerel are caught in August off Filey Brigg, where, in common with cod and coal-fish (locally known as " billet ") they take a salmon-fly thrown from the rocks. Some of the gigantic flies specially tied for the Brigg, and sold at Scarborough, are terrific objects such as might have been looted from ju-ju temples in West Africa, but the fish of the Yorkshire coast seize them with avidity. What they take them for, they alone know. The ordinary " mackerel fly," used on whiffing lines, is a much simpler affair, consisting merely of two red, white, or green feathers lashed to a tinned hook with a head of red sealing wax.

After the break-up of the shoals, usually late in August, the mackerel generally go to the bottom, and numbers are caught on ground-tackle from October to Christmas, along with whiting and codling.

It will thus be seen that the mackerel may be caught in almost as many different ways as the bass, and there is not, in fact, a more sporting fish in the sea. Its only drawback is its small size.

VIII. THE CONGER EEL

By F. G. AFLALO

ORDINARILY speaking, the freshwater eel is, perhaps, the most disgusting fish caught on rod and line. Of course, if a man fishes deliberately for eels, by the method known as bobbing or otherwise, I suppose eels are welcome as a trout on a mayfly; but to catch one accidentally is no more agreeable than finding the point of a pin in a bran pie. I recollect hooking a large eel once in a quiet river of the Ardennes when worm-fishing for trout, and there was something so outrageous in the sight of its yellow body bending my split cane trout-rod that I instantly cut the line rather than play such vermin to the net.*

The conger is, however, somewhat cleaner and brighter than the eels of rivers. A conger of twenty or thirty pounds is a bold female—male congers are degenerates that weigh no more than a pound or two—and a very Amazon to fight in the darkness of an August night. There is, moreover, irresistible glamour about the strange conditions of this night fishing, when the boat, anchored at sundown within hail of the cliffs, rocks ever so gently on an uneasy sea, and the twinkling lights of the pilchard fleet drift past, and drowsy little sea birds mew in their roosting places overhead.

Anyone looking out for as much excitement as possible should fish for conger with a rod, though, personally, having once caught one of twenty-four pounds in this fashion one pitch-black summer's night off Mevagissey, I find that the handline gives all the enjoyment I ask for. That particular conger all but broke the thumb of my left hand, ruined a valuable reel, and finally kicked over our only lamp, subsequently raging up and down the boat for several minutes in all the joy of life, whilst my boatman and I belaboured each other with bludgeons in a vain attempt to calm it. It was a very foolish performance for all concerned, and anyone who calls such knockabout frolic sport is welcome to it.

Conger fishing cannot be made very artistic work at best, but a night on board a lugger anchored on the conger ground is an interesting change

*I once landed a small eel on a red spinner when fly-fishing for trout in a Scottish burn. The condition to which that creature reduced a fine gut cast was truly Gordian.—ED.

from the sameness of fishing by day. Only a single hook should be used, though many people prefer two. If, however, each hook were to be seized simultaneously by a big conger, the fisherman would run the risk of being pulled over the side. Ever since, on one occasion in the Black Forest, I hooked two large trout at once on the tail and dropper, losing one, and very nearly both, in the turmoil that followed, I have had my doubts about using more than one fly, and the same criticism applies to angling for big fish, or with light tackle, generally.

Conger tackle must be of the strongest. Not only, even when fighting in open water, is the conger one of the most powerful fish in our seas, but it has a trick of winding its tail round a rock or clump of weeds with such a grip as to test the strongest hook and line. Straightforward effort to dislodge it is fruitless, and the best plan is to delude the fish into the belief that it has succeeded in breaking the line. This can, as a rule, be accomplished by first pulling the line hard and then suddenly throwing a fathom or two of slack over the side. In a minute or two it will be found that the conger has, of its own accord, relaxed its hold and is swimming away, thinking itself free. This trick has been played times out of number, and rarely fails, though no one seems to know who originated it. It may, like most angling strategy, have had its origin in fresh water, but I never heard of its being employed against any fish other than the conger. Indeed, if it be tried once or twice without result, the fisherman is safe in assuming that his line is round the rock, and that he is out of direct communication with the other end.

The teeth of the conger are many and sharp, and the material to which the hook is made fast must be either too hard or too soft for the eel to bite through. The suggestion of having it too soft may read like a paradox, but its soundness is beyond dispute, and may easily be put to the proof with an ordinary knife. If the harder material is chosen, then copper wire should be bound round the line for two feet above the hook. This, however, makes the latter lie stiffly, and the better plan is to tie it to very soft flax threads, which offer so little resistance that they jam in the conger's teeth and are not bitten through. The lead is best a couple of fathoms above the hook. It is true that the alternative plan of having the lead at the extreme end of the line, with the hook above it, allows of the hand feeling the bite more readily, but the lead is very apt to get foul of the rocks. With the lead, on the other hand, above the hook, as in the tackle previously described for catching pollack at anchor, it can be allowed

to run down till it touches the rock, and then smartly withdrawn just far enough off the ground (in the case of two fathoms being between the lead and hook, the lead may be raised about eleven feet six inches) to allow of the bait lying quiet. This is one of the secrets of success with conger, that the bait shall lie undisturbed, for these fish are exceedingly suspicious, and the least movement on the part of the bait would be quite enough to send one elsewhere for its supper.

Another factor in success is to have the bait both soft and fresh. The conger, for all its efficient teeth, detests hard food, and does not fancy it "high." The objection of the conger to hard food is amply proved by the fact that, though a big conger would have no difficulty in biting through the shell of an average lobster, the eel never attacks the lobster until it catches it soon after casting its shell. Squid, then, must be well hammered to make it soft, the ink must be washed out of cuttlefish, and the parrot-like beak and bone must also be removed. Squid is not always to be had, it is true, but if there are trawlers fishing in the district, they generally catch a few in the nets, and if squid are very plentiful, as in many parts of Cornwall, the angler can catch them for himself. He will soon be apprised of their presence, for they have a knack of stealing bait off the pollack hooks with a peculiar sucking action, different from that of any fish. A "squid-hook" should then be put out. It consists of three or four hooks, with the barbs filed off, lashed back to back in the form of a miniature grapnel at the end of a line. A pilchard is then made fast about a foot above the hooks. As soon as a squid is felt worrying the bait, the grapnel must be jerked smartly upward so that it may foul-hook the intruder.

Pilchard, herring and mackerel are also good baits for conger, but these, again, must be perfectly fresh, and the backbone must in every case be taken out. A small rockling is the only livebait I have known used with success, and on some parts of the coast it is the most killing of all.

Catching conger cannot be regarded as very difficult. All that need be done, once the right tackle and bait are in readiness, is to anchor the boat over the rocks, picking up the "marks" while there is yet light, and then waiting for darkness to set in. The hook is baited, the lead allowed to run out, and then withdrawn, as described above, and the line finally made fast to a thwart or rowlock. It is then best left alone, as only a practised fisherman could hold it in the hand without risk of disturbing the bait.

Now and again each line should be held very gently between the thumb and forefinger, and raised no more than a couple of inches. This should be enough to ascertain what is going on down below. If there is any sign of a bite, the grip should tighten on the line, and as soon as the conger is felt to be moving off with the bait, a good fathom of line should be suddenly snatched in over the gunwale. If the eel is hooked, it should be hauled away from the rocks with as little ceremony as need be, and kept on the move. It does most of the moving itself, with that curious jerky backward action suggestive of a motor launch going astern. The next thing is to get it inside the boat as quickly as possible. If it is only eight or ten pounds, or less, there should be no need to gaff it, but it may just be hauled over the side (there is very little chance of the hook coming away) and dispatched, either by using it as a lash and flogging the boat's thwart with it, or by hitting it on the head with anything handy. The heavy fish, of twenty pounds and over, must needs be gaffed, though their tremendous gyrations are liable to twist the strongest gaff out of its socket.

From the foregoing it will be realized that conger-fishing is, at best, a somewhat brutal form of sport, with no romance in it beyond that inseparable from a night at sea. Its attraction lies wholly in the opportunity which it affords for a stand-up fight in seas that provide very few fish of such mettle. Elsewhere, with a variety of game sea-fish, equally strong and infinitely more beautiful, conger-fishing would be beneath contempt, since it is not so much angling as a tug-of-war, a pull-devil-pull-baker business, with a bludgeon at the end of it, in which a burglar would stand the best chance of success. For yachting men, moreover, it has the further objection that a conger, on coming aboard, makes a disgusting slimy mess. For this reason, it is always desirable to fish for it from a boat belonging to somebody else.

So much of the novelty, indeed, belongs to the condition of darkness, preferably, so far as sport is concerned, without a moon, that conger-fishing by day is not likely to engage serious attention where there is better game to be had. There are spots, however, in Cornwall and the Channel Islands where, in deep water, with gloom enough to encourage the conger to forage, large specimens are caught in daylight. Fish up to ten or fifteen pounds are also occasionally to be had close inshore after a spell of rough weather, but the majority of those taken in the day from piers and jetties are small fish, mostly males. Very large conger are sometimes found

in the crannies of rocks uncovered at spring low tides. A conger takes almost as long to die as a cat, and can keep enough moisture in its gills to last it until the return of the tide. Some people find sport in trying to drag them out with a gaff hook. It may, however, be so ordained that the sport is all with the conger, since it is, as a rule, necessary to thrust the arm that holds the gaff some way into the cleft in the rock. What has happened before now is that the conger, by a sudden retreat, has dragged the would-be captor's arm further into the rock before he could loose his hold of the gaff, wedging it so firmly that he was overtaken and drowned by the incoming tide, a terrible death to run the risk of for so poor a reward. Those, therefore, minded to indulge in such amusement should, at any rate, go in company, so that a rescue may be effected in good time.

IX. THE "COARSE FISH" OF THE SEA

By F. G. AFLALO

HITHERTO we have been concerned with a number of sea-fish which are angled for, each by its own peculiar methods, with tackle and bait specially adapted to its tastes and manner of feeding. On the whole, it must be confessed, a fish which, like the bass or grey mullet, demands close study of its haunts and habits, makes the strongest appeal to the sportsman who takes his fishing seriously, since he knows that, though luck must always play its part in failure or success, the best catch usually goes to him who best plays the game. On the other hand, beginners, with others who take their sport unscientifically as an excuse to be on the water, have an affection for those ground-feeding fish, such as cod, whiting, whiting-pout, sundry flatfish, from the powerful halibut to the frequent dab, gurnards, dory and garfish, which may, collectively, be considered under the above title. The herrings, represented in warmer seas by the tarpon, a full account of which is given elsewhere in these pages, afford no sport in European waters, unless, indeed, we include the method of "jigging" for them with a mirror in Calais harbour. The larger sharks and rays, coarser than any species named in this chapter, are also referred to separately, and have to be caught with special tackle adapted to their size and strength.

The characteristic habit which the foregoing miscellany may be said to have in common is that of living, or at any rate feeding, near the bottom of the sea. They have not, therefore, to be sought, like bass or pollack, near the surface and over a considerable area of water. True, the garfish often feeds, in company with mackerel, at the top of the water, and the dory, as well as some of the flatfish, has been known to follow a bait drawn slowly to the surface; but, on the whole, these are all ground-fishes. Individually, no doubt, they furnish less sport than a bass or grey mullet; but they are easy to catch and good to eat, which commends them to all who are able to appreciate a fish on a plate as well as on a rod.

All that is necessary, given the proper tackle and bait, is to anchor a boat over the right spot and to keep the baited hooks near the bottom. Whiting-pout, alone of the number, live habitually amid the rocks, and as, moreover, they keep to deep clefts, or gullies, the boat must be placed

with extraordinary accuracy on the ground, else failure will result. I have, when fishing down in Cornwall for these "bibs," as they are called on that part of the coast, known one rod take half a hundred of good size in a few minutes, while there was not a single bite among two or three other rods in the same boat. The necessary precision is, of course, possible only to a fisherman of the locality, since there is no sign to show the whereabouts of the grounds, and even the seafowl, often valuable guides to the position of bass or other surface-feeding fishes, give no help in the case of those which feed on the bottom.

Such exact bearings are not, as a rule, required in the case of the rest, all of which are more commonly found on sandy ground, which covers, in our seas at any rate, a much greater area of the bottom, though cod and some of the flat fish are occasionally found among the rocks. The dory, or "John dory," as it is more usually called, is for the most part hooked accidentally. It has a habit of seizing some small fish already on the hook, and this sticks crosswise in its mouth and prevents it disgorging its prey before being hauled into the boat. It is an ugly animal, but it is a case of handsome is as handsome tastes, for its flesh is firm and sweet.

To those unfamiliar with the general appearance of the fishes referred to in this chapter, a few words on the subject may not be out of place. The cod may be recognized by its long and tapering shape, dark back and white belly, and the little "beard" on its lower lip, a sensitive organ that, no doubt, helps it to find its food. The codling (a young cod) and whiting-pout also have this beard, but the latter is a shorter, deeper fish. The whiting, or "silver" whiting, on the other hand, which is much lighter in colour, and grey rather than brown, is without it, having probably no need of its help. The whitings of other days must, however, have had beards, as these are found in very young individuals, soon after leaving the egg; and whenever a feature, conspicuous in youth, is dropped in later life, we are safe in regarding it as a survival from ancestral forms.

The principal flatfish caught by amateurs (if we except the gigantic halibut taken on the rod at Ballycotton and elsewhere) are the turbot, plaice, dab, sole and flounder. The turbot, one of the broadest, is easily distinguished from the somewhat similar brill by the presence of rough knobs, or tubercles, all over its body. The upper surface (really the left) is sand-coloured, and the lower (or right) side is white, while the head has the peculiar wry expression common to this group. The plaice is easily known from the rest by its red spots, and the dab, which is not

unlike a plaice in shape, has brown spots and a rougher skin. The sole, with its long, narrow body, smooth skin and small eyes, is too familiar to need description, and the flounder, which, though broader than a sole, is narrower than a plaice, has the peculiarity of spending much of its life in fresh water, though it has (like the river eel) to go down to the sea to spawn. The gurnards, some of which are brilliantly coloured, may be known by their disproportionately large and grotesque head, which is armed with a number of finger-like appendages. The dory is, as has been said, an ugly customer, with an enormous head and tube-shaped mouth. Last of all, the garfish, in shape not unlike an eel, though with a forked tail, in colour blue and silver, has, as its most distinctive feature, a bony, slender beak, not unlike that of a woodcock. Its green bones prejudice many people against it, but it is better eating than many of its neighbours.

With the exception of the larger cod and halibut, these are all comparatively small fish, and two or three hooks may therefore be used without the same risk of disaster as when angling for big game. One of the most useful forms of tackle is that known as the "paternoster," in which the hooks are strung at intervals on a length of gut, with a pear-shaped lead at the bottom, a stronger version of the device commonly used for catching perch. Another arrangement, also in general use, is the crossbar, or chop-stick, pattern, in which a stiff bent wire projects about a foot on either side of the lead, a hook on five or six inches of gut hanging from each end of the bar. It should, however, be remembered that the type of crossbar tackle commonly used by the longshoremen who let out boats for fishing, is much too cumbersome for use with a rod, and the angler with a fancy for this sort of pattern must exercise his own ingenuity to devise something much lighter. As yet another alternative, he may use a light form of the tackle already described for pollack, with the special Cornish lead, but this, it will be remembered, has to be thrown out in a particular way, so as not to foul the line, and when used with a rod, this must first be done by hand, as any attempt to do it with the rod will probably end in trouble. As, moreover, even when thrown out in the wrong way, the mistake is not always apparent until the lead has sunk out of sight, the angler may be placidly fishing with the hooks and lead all in a tangle without knowing that anything is amiss. Others, again, fish with a long "streamer" of gut carrying two or three hooks and attached to the line just above the lead, which lies in that case on the bottom (in the Cornish pattern, of course, it is withdrawn about a fathom or two, with the hooks below it), and this,

when used properly, is the most sensitive tackle of all, enabling the fisherman to feel the slightest pull on the hooks, while it also keeps these some distance from the lead, an advantage in clear or shallow water.

The baits available for this "coarse fishing" in the sea are as varied as the tackle. It is no longer a question of one bait or none. Here are no bass that will look at nothing but the living sand-eel, or grey mullet that must have bread paste, or conger that demand their food fresh and soft. On the contrary, the angler has to deal with a much less fastidious miscellany of fishes with large appetites and ready to snap at any trifle such as lugworm, mussel, cockle, scallop, shore-crab, hermit-crab, prawn, shrimp, mackerel, herring, pilchard, sprat, or, in fact, almost anything eatable from their point of view.

On the whole, the whiting is, perhaps, for its size, the most sport-giving of them all, and where whiting are large and plentiful, as I once remember finding them a couple of miles off Biarritz, the fun is fast and furious. I have had merry times with these fish nearer home also, as one morning at daybreak, within a few cables' length of the Eddystone Lighthouse, but the tide runs with such terrific force in that locality that, for those who use a light rod, with necessarily little lead to keep the hooks down, no more than half an hour at slack water is left for fishing, and as it is necessary, in order to get the fishing at dawn, to leave Plymouth overnight, not many will go to the trouble and fatigue for so brief a chance of sport. Those who do, however, may find themselves repaid with a wonderful catch of whiting (and may catch nothing at all), and, sport apart, the effect, on a fine morning in August, as the sun comes up out of the East and reddens the Sound, is unforgettable among the comparatively few notable scenic memories treasured by those who fish away from lakes and rivers.

The majority of the fishes referred to in this short chapter, and certainly the cod and whiting above the rest, are, in a sense, wanderers. Their migrations may not be so closely associated with certain months of arrival and departure as those of the mackerel, herring, or pilchard; and their travels may be less along the coast than merely to and from the deeper water out of reach of the fishermen, amateur or professional. Yet they undoubtedly come and go, being more in evidence at one season than another. Of the manner of their movements, however, and the duration of their stay, wise men know less than they claim to, and even the fishermen who live by such knowledge are often at a loss.

X. SHARKS, DOGFISH AND SKATE

By F. G. AFLALO

ONLY in a popular sense, as distinguishing between the larger ocean sharks and some of the smaller kinds which frequent our shores, is it correct to separate sharks and dogfish, for the latter are nothing more or less than small sharks. This does not imply that they would ever grow into big sharks, for four or five feet is the greatest length attained by some of them. They are always more or less in evidence on the coasts of these islands, and at times constitute a dreaded plague to the fishermen, tearing their nets, and robbing their lines, so that it becomes impossible to fish at all until the shoal has moved elsewhere, devouring everything in its path, like a swarm of locusts. Those who regard fishing for such vermin as sport—and, as will presently be shown, the tope does, at any rate, appear to give good value—have abundant opportunities. At Filey, in Yorkshire, and on several parts of the coast of Kent, notably at Herne Bay, and Essex, the tope is much sought after in summer, and I understand that it is to be caught at Christchurch, off Hengistbury Head, all the year round, specimens of thirty-six pounds having been recorded there. Lord St Levan, a keen sea angler, recently had exciting sport in pursuit of large sharks in Mounts Bay, within sight of his castle windows, and, though his success was slight, he succeeded, at any rate, in so scaring the shoals as to drive them out of the neighbourhood, which was all the fishermen wanted. These must have been large game for English seas, for some of them were computed by those who had a good view of them to measure as much as twenty-five feet, and they were unlike any sharks with which the men of Newlyn and Mousehole were previously familiar. This suggested to Lord St Levan a doubt whether they might be basking sharks or the white kind, and he invited my opinion on the subject. Without the opportunity of seeing one, alive or dead, this could only be guesswork, but I favoured the view that they were white sharks, which are closely related to the common blue kind, for they appear to me to have been altogether too active in their behaviour for basking sharks, sluggish giants that do not, as a rule, swim in shoals and that, like whalebone whales, feed on minute marine life, and are inoffensive unless molested. The late Sir H. W. Gore-Booth used to tell me many

years ago of the exciting sport he had when harpooning these immense basking sharks in Irish waters, and, so far as I recollect, though formidable enough when wounded, they were never in the least aggressive at other times.

The blue shark and porbeagle are regular summer visitors to Cornwall, and I have caught both many times when fishing for pollack on the outer grounds off Fowey and Mevagissey. The blue shark is sufficiently described by its name, and has the pointed snout and crescent-shaped mouth, with two or more rows of small, sharp teeth, on the under side of its head. The porbeagle, which is dark brown in colour, is of heavier build, and lacks the sinuous grace of the other. Nor has it the troublesome habit of gyrating in the water when hooked, so as to wind the line all about its body, which makes the blue shark so difficult to dispatch. We never fished for either of these sharks of set purpose, in the days when I was a regular visitor to Mevagissey, but only when they interrupted our sport with better game, though the late Matthias Dunn, an old inhabitant of that village, and a man better informed than his neighbours on all matters connected with fish and fishing, often said to me that, if it could only be made better known, shark fishing in Cornwall would soon become very popular, words to which the recent vogue of tope-fishing at the other end of the Channel has since lent peculiar significance. There were hot, still days on which, without any apparent cause, the pollack would suddenly stop biting, and the odds were that if we threw out two or three pilchards, the back fins of a shark would soon be seen circling slowly round the boat. Then we would take in all lines and throw out a heavy one, with a single large hook baited with a whole pilchard, the shank of the hook being long enough to occupy the shark's teeth. As a rule, the shark soon took the bait, and had then to be played to the gaff. A blue shark would be hauled inside the boat, clubbed, and taken off the hook, care being taken that it did not remove all the skin off an unwary arm with its skin, which is as coarse as sand-paper. The porbeagle, on the other hand, was treated with more distant respect and killed outside the boat, when it would be either cut adrift or slung over the bow to take ashore. The reason for this different treatment lay in the fact that we knew the dreadful odour of its blood, which is so tenacious that it cannot be got out of the boat for days. In addition to these two sharks, the thresher, or mackerel-shark, was generally seen on hot August days, flinging itself in the air and falling back on the dense shoals of mackerel or pilchards, on which it next

proceeded to gorge, but I never heard of a thresher taking a hook, though they were commonly entangled in the drift nets. This is the shark which engages whales in deadly combat; but it is the shark which does not, as the fishermen on some parts of the coast firmly believe, swallow its young ones to protect them from danger, after the manner popularly associated with the adder.

The so-called dogfish of our coasts are, as has been said, only small kinds of shark. Some illuminating rubbish was recently published in one of the magazines, in the course of which the writer described the tope as "a sort of cross between the dogfish and the ordinary man-eating shark . . . yet belonging to neither species." What the writer meant by this amazing *tertium quid*, he best knew; but what he apparently did not know was that there is no single species known as either a dogfish or a man-eating shark, though there are many species of both. The tope is actually a small grey shark, which grows to a length of six or seven feet, and hunts its prey in packs. It has no spines in front of the back fins, like the so-called spur-dog, and its body is not covered with spots like that of the other common dogfish known as the nurse. The name tope is somewhat obscure, but may probably be regarded as a form of "top," in allusion to its habits of feeding at the top of the water, which, in fact, as well as its trick of jumping when hooked, makes it popular with sea anglers. Like many of our sharks, the tope is to some extent a wanderer, and is most conspicuous in Kent during the summer months. It occurs at Margate on the pouting ground, close to the jetty, and specimens of over fifty pounds weight have been caught there, the tackle being a strong rod and line, with a piano wire trace and a whole whiting or other small fish for bait.

This deliberate fishing for tope is a development of the last four or five years, coinciding, in fact, with the eventually successful attack made by Mr Ross on the tunas of Cape Breton, for it was not until 1908-9 that the more than occasional success of anglers with these dogfish inspired them to specialize in tackle and methods of capture. Mr Daunou, one of the pioneers, caught forty-six of these fish in one season (1911), the heaviest weighing forty-two and a half pounds. His tackle consisted of a split cane rod of seven and a half feet, with one hundred and fifty yards of strong silk line and a trace of steel wire, coppered and silvered as preventive of rust, with swivels, the bait being a small whiting or dab. This is heavy tackle, and is adapted to catching the largest tope in the strongest

tides; but a lighter outfit could be used with success, for a tope of thirty pounds has been landed (at Herne Bay) on single gut and dab tackle. It is useful to know that a good blow on the lower side of the snout disables most sharks, and Mr Daunou adopts the time-saving principle of nipping through the trace and leaving the hook in each fish for subsequent recovery. There seems to be some doubt whether these fish come inshore to give birth to their young (they do not spawn like the majority of fishes), but, judging from the large number of females caught, with the young ready for extrusion, this is probably their object. One writer on the subject suggests (in the " Quarterly " of the British Sea Anglers' Society), an ingenious method of groundbaiting for tope, which consists in tying the entrails of a skate to a good-sized stone. This, as he points out, will keep them on the ground far more effectually than loose heads or other morsels which they can easily pick up and swim away with, and the principle is worth applying in other cases where groundbaiting is involved.

That angling for these big dogfish has of late years become a recognized sport is in great measure due to the efforts of amateurs to find some substitute for the big game of American seas. They cannot, of course, compare for size and strength with the tuna, or for activity with the tarpon, yet, insomuch as they are among the very few fishes of our seas that actually jump out of water when hooked (I have seen large garfish behave in the same fashion), they have some claim to popularity. Otherwise catching these shore sharks, whether blue, porbeagle, spotted nurse, or spur-dog, is usually accidental, furnishing occasional diversion from the tamer amusement of reeling up bream or whiting, and the only pretext for their intentional capture was formerly when, as already described, their presence was found to scare more valuable fishes away.

For the really gigantic sharks that infest the ocean, a menace to seamen, yet doubtless performing their allotted task in the general economy of Nature, it is necessary to visit the tropics and neighbouring regions, where these ferocious creatures often exceed a thousand pounds in weight and twenty feet in length. I recollect one morning in May, some years ago, while fishing for tarpon, as described in an earlier chapter, in Boca Grande, being towed by a shark for a couple of hours and more. One of the party had actually beached a comparatively trifling specimen of three or four hundred pounds or so, and seven or eight feet long, only the day before, but the fish that seized my bait measured exactly fourteen feet, and its weight was estimated at about twelve hundred pounds. There

was no amusement whatever in this lamentable waste of two hours during which tarpon were biting well, and only the remembrance that I had not another spare line with me prevented my cutting the brute loose. The only much larger shark than this that I ever saw at close quarters suddenly rose from the depths alongside my steamer at Cairns, in Queensland, one evening many years earlier. It measured over nineteen feet, in fact only three inches short of twenty, as we were able to estimate from the fact that its head and tail lay opposite the companion and cook's galley. What it came for, so close to a ship, we could not guess. What it got was first my big shark hook, which it first took into its enormous mouth and then blew out as a roach blows out a pellet of paste, and then a stream of lead from a magazine rifle, which did not even frighten it, as it just sank very slowly out of sight absolutely unhurt. It was a tiger shark, and I managed to catch a couple of the pilot-fish that were swimming round its head. But of the shark itself we saw no more.

Sharks swarm along the whole length of the Australian coast. When fishing for snapper off Sydney Heads, we used to be plagued with them at times, and a considerable number of those hooked proved to be females with living young inside them. A man employed in connexion with the submarine mines at the Heads used in those days to earn pocket money in the form of the reward paid by the New South Wales Government for killing large sharks. He had an ingenious arrangement by which a dynamite fuse could be hidden in a joint of pork and fired from a battery ashore. The shark did the rest after the man had pressed the button, and he was generally able to recover sufficient of it to claim his reward.

Great rays and skate were also plentiful in those seas. I once hooked an enormous stingray off the old "Oceana" that is no more. We were anchored off the Semaphore, in Largs Bay, for the night, and I had the ray on for some hours, at the end of which, just when I had it exhausted on the surface, the ship's butcher obligingly came to my assistance with one of his knives and, being a little over zealous, cut through my line while trying to stab the fish in the head. Some of the largest rays I ever set eyes on were in Florida, but these never take a hook, the only way of catching them being with a harpoon. Both Mr Dimock and Mr Turner Turner have enjoyed this sport, and Mr Conn, who is well known at Santa Catalina, has, I think, harpooned the record ray in Mexican waters, though what it weighed I do not remember hearing.

Skate are plentiful enough in our seas, and very large specimens of over one hundred pounds have been killed on the rod at Valentia and Ballycotton. Personally, I am not addicted to skate-fishing, as I would as soon look for sport from a waterlogged sailing boat, and a halibut of half the weight would give twice the sport. For those who like such fishing, however, there are few difficulties. Skate are not much more fastidious than their cousins, the sharks, and any large hook baited with lugworm, herring, or mackerel, backed by tackle strong enough to raise a drowned horse, should answer the purpose. It seems to be chiefly in Irish waters that the best of skate-fishing is to be looked for, particularly within reasonable distance of shore. These fish are plentiful enough in the English Channel, and very large examples are caught at Penzance. It is surprising how abundant these little skate are right at the edge of the sea. While making some experimental hauls not long ago with a shore seine on the south coast of Devon, I took scores of little skate in company with mackerel, pilchards, gurnards, plaice, dabs, weevers, and the usual miscellany of crabs, squid and other treasure trove of the foreshore. Indeed, as a means of combining healthy exercise with the novelty and excitement of a varied catch, there is, so long as it is done in moderation, and with scrupulous regard for the duty of throwing back all undersized fish alive, something to be said for an afternoon's seining.

XI. ON THE MAP: AT HOME

By F. G. AFLALO

IT is proposed, in the two remaining chapters of this section, to give a brief account of the sport to be found on different coasts, at home and abroad. Some of these, with the methods characteristic of each, have already been referred to, and, to save unnecessary repetition, the page on which such allusion occurs will be given in brackets. These notes make no claim to completeness, and are offered only by way of suggestion. Some years ago Rudyard Kipling, whose affection for angling deserves to be better known, suggested that the writer should compile a kind of sea angling Baedeker for all the world. So ambitious an essay was not to be thought of, but a very few of the gaps are filled in the following pages, and those who, with intimate knowledge of particular localities, find the information meagre, should remember the necessity of compression.

I. ENGLAND AND WALES

(i) THE EAST COAST. The characteristic fishing of the north-east coast, from Tweed to Humber, is from the rocks, of which some details have been given above (p. 295). The Wash, with the adjacent coast-line of Lincolnshire, is some of the poorest ground for the amateur in all England, and even the inshore trawlers catch only small fish. In Norfolk and Suffolk, matters improve, with bass fishing in summer, and cod and whiting in autumn and winter, Sheringham being the northern limit of bass on the east coast. Essex affords the same kind of sport, and in Kent there is the additional attraction of tope and grey mullet.

THE TWEED TO THE HUMBER. Berwick is not a famous spot for sea fishing, but both here and at Alnmouth there is a little sport from boats with coalfish, codling, whiting, haddock and flatfish, the bait being either herring or lugworm. At Seahouses, which lies between the two, a boat may be taken to the Farne Islands, where fish run bigger. The rock fishing actually begins at Cullercoats, near Newcastle, where float tackle is used, with lugworm for bait, but the fish run small. The coast of Durham offers little sport, and the first of the Yorkshire towns, Redcar and Saltburn, give sport only from the piers and boats, the autumn codling

being good at the latter resort. At Whitby also the fishing is all from boats, the whiting ground being behind the Bell Buoy, and the rough ground for codling lying opposite Sandsend. The boats are not anchored, but drift with the tide. Mussel is the local bait for whiting, and soft crab for codling. The best rock-fishing, however, is at Scarborough and Filey and on to Flamborough, and the tackle and baits have already been described. At Flamborough, amateurs cast with a couple of white rubber baits instead of flies. The fly fishing from the Brigg is possible only in fine weather, but cod are caught from the open shore even in rough seas. At Bridlington, there is sheltered water for "coarse" fishing from boats, but no rock fishing.

THE WASH TO THE THAMES. With Norfolk, we come to the northernmost range of the bass, a fish met with right round the south coast and as far up the west side as Pwllheli. Bass are caught at Sheringham in boats, with hermit-crab for bait. It is not a conspicuous fish at either Cromer or Yarmouth, though known at both, but is caught every summer at Aldeburgh and Felixstowe, at the former by either railing with live sand-eel or artificial baits, or fishing from the beach with lugworm bait; and at Felixstowe by railing, or from the pier with ragworm bait. At all these resorts, there is good autumn and winter fishing for cod and whiting from either the piers, beach, or boats, and lugworm is everywhere the favourite bait.

There is good bass ground in Essex. The piers at Walton and Clacton give large bass in summer, with either shrimp or herring bait, and at Clacton all the fishing is done at night. There is also the usual autumn fishing for codling and whiting, and this is particularly well known at Maldon and Burnham, though the tides in both estuaries, and especially in that of the Blackwater, run so swift that it is only possible to fish at slack water.

THE COAST OF KENT. Though it lacks the rock fishing of Yorkshire and the sheltered estuaries of Essex, Kent offers, on the whole, more varied fishing than any other shire on the east coast. Bass fishing has long been famous at Herne Bay (with artificial baits cast from the pier), Margate (by railing with flies or sand-eel on the rough ground off the Ness), Ramsgate (by fishing with herring bait off the parade), and Folkestone (by fishing, also with herring bait, from the beach on summer nights); and there is the summer mullet fishing at Margate (p. 368), and tope (p. 386) at both Margate and Herne Bay. The sport on

Deal Pier, which lives on its reputation, has not, perhaps, been so good of late years as it was formerly, and Dover has fallen still farther from grace, thanks to the "improvements" in the harbour in course of completion. The railway pier at Folkestone, however, is nowadays one of the best on that part of the coast. As for the sport from the beach at Dunge Ness, the latest reports are distinctly discouraging.

(ii) THE SOUTH COAST. Taken as a whole, from Dunge Ness to the Land's End, this south coast of England, though it has not the big game of Florida, California, or British East Africa (I allude to the sea fish of Mombasa, not the lions of Tsavo), offers some of the best all-round sea fishing in the world. True, there have of late years been more anglers, and consequently fewer fish, while such fish as are left, and particularly the big veterans, have learnt caution, and are harder to catch than their grandfathers and grandmothers were twenty years ago. There are sometimes mullet in the inner basin at Ramsgate as cunning as carp in a pond; and it may safely, and without fear of contradiction, be said that the mullet at Weymouth, the bass at Teignmouth, and even the pollack in the open sea off Mevagissey are either fewer or more wary (or both) than I knew them twenty years or less ago. To deny, as some folk do, that the great increase in the numbers of amateur fishermen has had no part in this change is to throw logic to the winds. The south coast differs, from the angler's standpoint, in many respects from the east. The inshore water is, on the average, deeper and clearer, and shingle beaches are commoner, at any rate east of the Solent, than those of sand. Calm seas are also less frequent, because the prevailing south-west wind blows over the water and not, as on the east coast, over the land.

DUNGE NESS TO THE SOLENT. A hundred years ago, the coast of Sussex and Hampshire must have been wonderful fishing ground, but sport has inevitably deteriorated since the coming of the railroad, since, in addition to the 350,000 people permanently resident in the half-dozen great watering places, every summer brings many thousands of visitors with the result that, at any rate during two months of the year, every pier is crowded with rods. Sussex, with its shingle beaches, strong tides, and patches of rock uncovered at low water, offers fair bass fishing from the piers, with bream, and (at night) large conger on the outer grounds, a few pollack near the Hampshire border, grey mullet at two spots, and

the usual "coarse" fishing. At Hastings, there is summer bass fishing from the beach, with herring or mackerel bait, and from the piers and harbour works anglers catch conger, whiting and flatfish. There is also good "coarse" fishing, baiting with herring, lugworm or mussel, off both Fairlight and Bopeep. At Eastbourne, on the rough ground off Beachy Head, bass are caught by railing with rubber baits and flies, and conger at night, baiting with squid. Bass are caught at Newhaven from the breakwater, the bait being a live prawn, and at Brighton from the beach or the piers, with squid or herring bait. Bream fishing has a great vogue on the outer grounds at Brighton, baiting with herring or mackerel, and there is good "coarse" fishing nearer the land. At Shoreham, bass are caught in the harbour, with live sand-eel, and at Worthing these fish are taken off the parade, with a wrasse for bait. The harbour works at Littlehampton give both bass (with green crab bait) and grey mullet (with ragworm), and the bass are fished for in the Arun as far up as Arundel, baiting with a live roach. Selsey is one of the best spots on the coast for beach fishing, and a live prawn is the favourite bait for bass and pollack. Chichester Harbour used to have a great reputation for bass and grey mullet, but, like other spots once famous, it has fallen away of late years.

THE SOLENT TO PLYMOUTH SOUND. Some of the best bass fishing on the coast is to be had in this district, notably almost anywhere between Weymouth and Brixham. Grey mullet are caught at Southampton, Weymouth and Plymouth; large tope off Christchurch; and there is fair autumn and winter fishing, with abundance of large mackerel, all along the south Devon coast. The Isle of Wight has been much spoilt from the angler's standpoint, and notably on the north side, by the great increase of traffic in the Solent, so that the once famous bass fishing round the Spithead forts is old history. Bass are still, however, caught at Ventnor, by railing with artificial baits over the rough ground opposite St Catherine's Lighthouse, and grey mullet are taken from the pier, baiting with bread paste or ragworms. The bass caught from the slip at Cowes are very small, and small bass, as well as grey mullet, are taken in the docks at Southampton. Passing over the tope fishing off Christchurch Harbour, and the very moderate sport nowadays obtainable at Bournemouth, we next find bass at Poole, where they are caught from Hamworthy Bridge on summer nights, baiting with live shrimps. At Lulworth there is fair pollack fishing, railing close inshore with rubber baits, and Weymouth

is a favourite station for both bass and grey mullet, chiefly from the Passage Bridge, the bait for bass being squid, soft crab, shrimp or mackerel, and that for mullet macaroni or ragworm. We now come to a long stretch of coast on which bass and small pollack are the fish that most engage the angler's attention. They are caught at Lyme Regis in boats of an evening, baiting with live prawn. At Seaton, they are taken by railing with rubber baits or white flies, and bass are also caught from the bridge, with squid or soft crab bait. There is also good rough ground for bream and pollack several miles from land, but smooth water is necessary. At Sidmouth and Budleigh Salterton, the bass are caught from the beach, with herring bait. At Exmouth and Teignmouth, they are caught in the estuaries with live sand-eel for bait. Until recently, it was customary to let the boats drift at Teignmouth between the buoys and the footbridge, but of late years local fishermen have adopted the Exmouth plan of anchoring in the tideway. Most of the best bass at Brixham and Dartmouth are caught from the rocks, either alongshore or a little way from land (p. 343). A little distance from Salcombe is Bolt Head, with good pollack fishing in fine weather, and Plymouth is one of the finest all-round stations for fishing on this part of the coast, with bass and pollack from the rocks, by casting with flies or using leaded tackle with pilchard bait; pollack and grey mullet from the pier under the Hoe, baiting with ragworm (mostly at night), and whiting round the Eddystone, with lugworm or herring bait.

SOUTH CORNWALL. As far as the Land's End, pollack and bream, with a sprinkling of blue and porbeagle sharks, and conger at night, are the characteristic fish now met with. It is true that bass are caught at both Looe and Fowey—at the former from anchored boats in the river, baiting with pilchard, and at the latter, also in the river, baiting with green crab—but this is not a famous neighbourhood for bass, and the grey mullet is rarely caught on the rod, chiefly, no doubt, for lack of suitable sheltered spots to fish in. There is, however, good pollack fishing almost anywhere along the south Cornish coast, the better fish being found on rough ground from five to ten miles out, and pilchard being the favourite bait, as well as that most easily obtained in summer. Bass are found again at Falmouth, round the rocks on the castle side, baiting with pilchard, and a few are caught at Mevagissey, either round Chapel Point or close to the Gwingeas. Penzance, on the other hand, is not famous for bass, but its pollack, conger and large skate may usually be reckoned on. Large

whiting are also caught in autumn, as well as cod, and Mount's Bay will long be remembered as the scene of Lord St Levan's recent raid on large sharks. The best of the fishing round the Scilly Islands is also for pollack, either railing with rubber baits, or baiting with rockworms, and hereabouts also is wonderful ground for conger, hake, skate and other big fish, but fine weather is essential, and fine weather is not always to be had. In any case, the ground swell is distressing to anyone not inured.

(iii) THE WEST COAST. Bass fishing is once more to the fore on the west side, from the Bristol Channel to the extreme north of Wales, and pollack, conger and "coarse" fish are also to be had in plenty. The west coast is more rocky and broken than the east, and heavier seas must occasionally be allowed for. On the whole, however, it is more promising ground for the angler, if only because, being farther from London, it is less crowded.

NORTH CORNWALL AND DEVON. Bass are caught at St Ives (railing with artificial baits, or at anchor with pilchard bait), Newquay (from the rocks, with live sand-eel), Padstow (at the mouth of the river, in somewhat dangerous tides, baiting with sand-eel or green crab), Clovelly (railing with flies or spinner), Ilfracombe (railing with rubber baits), and Lynmouth (the esplanade, with squid bait, or in the river, with float tackle and soft live prawn or green crab). There is good ground for pollack and skate, with conger at night, off Newquay (baiting with pilchard), Ilfracombe (baiting with lugworm and mussel) and Lynmouth (herring bait), while at the last-named grey mullet are also taken in the mouth of the river, using float tackle and baiting with soft roe of herring.

WALES. Bass are caught from the piers at the Mumbles and Tenby, baiting with ragworm or herring, but the best fish at Tenby are taken in boats in the swift tides off Caldy Island, either railing with a bait made of bass skin, or at anchor, with a bait of ray's liver. At Barmouth, on the other hand, they are caught by railing in the estuary with a bait made of plaice skin, and at Pwllheli in the lagoon, with live sand-eel, or railing round the island with artificial baits.

The rest of the west coast is of little account to the amateur, at any rate until we get to the rocky ground near the Solway, where the fishing, which is probably better, has been little studied.

The Isle of Man, which is somewhat outside the holiday ambitions of

many, gives excellent sport in some years, but appears to vary. It is beyond the ordinary range of the bass and grey mullet, which are southern fish, but has abundance of large coalfish (the northern equivalent of the pollack), conger, ling and skate. Sand-eel and herring are the favourite baits, but there is also good mackerel fishing and railing for coalfish with rubber baits and flies.

II. SCOTLAND AND IRELAND

Although our knowledge of many Irish stations has been increased of late years, notably by the efforts of enterprising members of the British Sea Anglers' Society, it cannot be said that we possess, even now, any information as to the best sea fishing in either Scotland or Ireland comparable to that which has been collated in respect of the English coast. All that can be indicated, in the limited space available, is that there is some rock fishing near Aberdeen, and that coalfish and pollack (saithe and lythe) may be caught anywhere among the western isles. In Loch Etive the writer has caught pollack and sea trout with alternate casts, both on the same fly. Anglers who get as far as Scotland, however, usually have salmon and trout in their thoughts, and free trout fishing within easy distance is an undoubted attraction of the majority of Scotch watering places. The same may, to a lesser extent perhaps, be said of Ballycastle, Bundoran, Dingle, and other resorts in Ireland, though the big skate and halibut of Ballycotton and other favoured stations have attracted most attention, and have, among their own enthusiasts, become as famous as tarpon and tuna. There is, however, no doubt that sea fishing in Ireland has a great future, particularly, perhaps, in the more sheltered inlets on the west side.

XII. ON THE MAP: ABROAD

By F. G. AFLALO

IN jotting down a few further topographical notes, in addition to those already given in the foregoing chapters, an even greater degree of compression is called for, since any attempt at detail would result in another volume of the same size as this. Preference is therefore given to spots either under the British flag, or at any rate already popular with British tourists. Indeed, the sea fishing of the British Empire would embrace almost every fish of importance in the world's oceans, from the harpuku of New Zealand to the tarpon of the West Indies, and tuna of Cape Breton. It has hitherto been the fashion to seek the tarpon in Florida or Mexico, and the tuna in California; but, with no disparagement of the hospitality and good-fellowship of American sportsmen, it becomes a mere question of economy to catch these fish in British waters, since the cost of living in either Eastern Canada or the Caribbean is not much more than half that of the average seaside resort in the United States. Even those to whom money is no object should, on patriotic grounds, spend their fishing holidays, when possible, in British territory, since the finances of those outposts of empire are not, as a rule, so flourishing that the natives can afford to lose such custom as may come to them from sportsmen and tourists. At the same time, there is, for many, a peculiar charm about the watering places on the Continent, particularly on the Atlantic coast of France, and along the littoral of the Mediterranean, and some notes on these regions will be found in the following pages.

I. EUROPE AND NORTH AFRICA

FRANCE. The seaside resorts of Normandy and Brittany, as well as both north and south of the limits of those old provinces, afford, as might be expected from the narrow strait between, much the same sport as our own south coast towns, though the inshore waters are for the most part less fished by amateurs, and yield, in consequence, better baskets. Thus even Calais, the pier of which is the meeting place of many anglers throughout the year, gives excellent sport at times, and so often described in the "Field" by my esteemed friend, "Sarcelle," otherwise H.B.M. Consul-General at Calais. Sportsmen use either the local "jigger," or ordinary

tackle baited with sprat, and the catch includes, at one season or another, soles up to two pounds and small sea trout, as well as whiting, herring, and even sprats. A few grey mullet are also taken, the bait being, as at home, paste or ragworm. At Boulogne I have from time to time seen more anglers than fish on the harbour pier, but there is fair bass fishing in boats off Wimereux, either railing with indiarubber baits or baiting with live prawn.

On the beautiful rocky coast of Brittany, where the visitor will have matters much more his own way, there are bass, grey mullet, and conger. The first-named may be caught from the rocks at St Malo, particularly on the Paramé side, at the end of the wall that encircles that old port, and the best method is to use float tackle with live prawns for bait. From the quays, close to the berths of the South Western Company's steamers, I have seen local anglers catching fair-sized grey mullet with ragworm for bait. Further down the coast, at Port Manech (where there is a comfortable annexe of the Pont Aven Hotel), large grey mullet enter the little coves in the cliffs, but, like the big bass, they are difficult to catch. I found, however, that they could be induced to remain within reach by generously baiting up a cove with bread and boiled potatoes. The worst problem is that of landing a fish when hooked, as it is often necessary, particularly as the tide rises quickly, to fish from a height, and landing nets are useless. The only plan is to play the fish till it is tired out, and then lift it through the air. With tender-mouthed fishes like the mullet, however, this is a risky proceeding. Some fair boat fishing may be had a little beyond Concarneau when the sea is in over the rocks, and large whiting pout (known locally as *tacots*) are the most plentiful fish on those grounds.

Further down the Biscay coast we come to Biarritz and St Jean de Luz. There is good whiting fishing off Biarritz in the early part of the year. I made quite exceptional catches there in March, and the charges made by the Basque fishermen are merely nominal when compared with those at home. Fine gut tackle pays in that clear water, and the bait is fresh sardine. St Jean de Luz is an excellent spot for both bass and grey mullet all through the summer. The bass are caught on float tackle, baiting with live prawn; the grey mullet are also taken on float tackle, but the correct bait is a stale sardine, and plenty of groundbait is used, the material being pounded sardines. All down the Biscay coast, by the way, tunny of manageable size are caught by the line fishermen, the bait being a shredded husk of maize, which suggests a gigantic artificial fly, but I am not aware that any amateur has ever succeeded in this locality.

ON THE QUAY AT CONCARNEAU

PLATE LX.

[illegible] spirit, and the catch includes, at one season or another, [illegible] small sea trout, as well as whiting, herring, and [illegible] the bait being, as at home, [illegible] I have from time to time seen more anglers [illegible] but there is fair bass fishing in boats off [illegible] indiarubber baits or baiting with live prawns. [illegible] coast of Brittany, where the visitor will have [illegible] there are bass, grey mullet, and conger [illegible] from the rocks at St Malo, particularly [illegible] the end of the wall that encircles that old port [illegible] float tackle with live prawns for bait. From [illegible] to the berths of the South Western Company's steamers [illegible] catching fair-sized grey mullet with ragworm [illegible] coast, at Port Manech (where there is a com[illegible] Aven Hotel) large grey mullet enter the little [illegible] the big bass, they are difficult to catch. I found [illegible] to remain within reach by generous [illegible] boiled potatoes. The worst problem [illegible] necessary, particularly [illegible] are useless [illegible] then fill it through [illegible] mullet, however, this [illegible] had a little beyond [illegible] over the rocks, and large whiting pout [illegible] plentiful fish on those grounds.

[illegible] coast we come to Biarritz and St Jean [illegible] fishing off Biarritz in the early part of the year [illegible] there in March and the charges [illegible] when compared with [illegible] water, and the bait is [illegible] for both bass and grey [illegible] bass [illegible] on float tackle, baiting [illegible] on float tackle, but the [illegible] groundbait is used, the [illegible] coast, by the way, [illegible] the bait being a [illegible] artificial fly; but I am not [illegible] locality.

NORTHERN WATERS. The fiords of Norway afford sport with haddock, skate, halibut, and whiting, herring being the invariable bait; but few anglers go to Scandinavia with any thought but for trout and salmon, and the salt water fishing is not very artistic work. The cold, shallow, brackish water of the Baltic, which I fished for several months many years ago, is also no ideal fishing ground, so far, at any rate, as the amateur is concerned. Those, however, who are satisfied with catching large river bream and perch in company with plaice and other marine forms, an experience which, if nothing else, should be a novelty, will get all the sport they want by using float tackle off any of the piers, like that at Warnemünde, that guard the estuary of a river. The bait is either garden worms or herring. Visitors must bear in mind that, within the rivers themselves, the fishing rights belong exclusively to the local fishermen, and they guard their monopoly very jealously.

THE MEDITERRANEAN. This beautiful and historic sea is not very kind to the angler. In other days, it must have been a wonderful hunting ground for the fishermen of many nations living on its shores, but centuries of over-netting and dynamite have done their work, and near the land, at any rate, fish are increasingly scarce, the grey mullet alone maintaining its numbers and providing sport for the rod from Marseilles to Smyrna. At Tangier, which lies on the threshold of the landlocked sea, I have caught a variety of fish from boats anchored in the bay or opposite Cape Spartel, and with both Moorish and Spanish fishermen. The latter are the more skilful, but are also more expensive and lazier than their neighbours. It was in Tangier Bay that, baiting with sand-worms and using fine tackle, I caught the only two red mullet that ever fell to my rod. Sport at Gibraltar is not nowadays of the first order, though occasionally good catches of whiting and other ground fish are made off the town. Along the Riviera, both French and Italian, the fishing is, owing to the causes aforementioned, indifferent. A few bass may be caught at Cannes during the winter months by railing at night with the mud-prawn known locally as *machotte* for bait. The boat must be rowed slowly, and the fish occasionally run to ten pounds, but are not plentiful. In summer, when the sardines come inshore, there is no better bait for bass than one of these little fish, and the fishing may then be done during the day. Other favourite baits along this coast, used for the most part with long rods from the rocks, are ragworms (*esques*) and small cuttlefish (*supions*). The muraena is plentiful, and in addition to its sharp teeth and vicious

temper, it has a way of tangling a line more hopelessly even than its cousin the conger. Further down the Italian coast the grey mullet is about the only fish that can be reckoned on. I used, many years ago, to catch good mullet in the Government docks at Leghorn, fishing at daybreak with a paste made of anchovies and arrowroot biscuits; and at Naples I have seen small sea bream, up to a pound at most, caught on long rods from the promenade by the Aquarium.

Near Malta, in the Comino Channel opposite Gozo, there are spotted rockfish up to three or four pounds, sardine being the best bait; and here, again, in the Quarantine Harbour, large grey mullet are caught with float tackle, baiting with bread, and throwing in plenty of groundbait. Greece is probably even worse off than Italy, for the Greeks are, if anything, even more wasteful fishermen. I have fished several times at the anchorages off the Piræus, but never hooked anything better than small fry. The same may be said of Smyrna, where, on a bottom consisting of a curious spongy mineral, I fished on three separate occasions without once getting even a bite. The bass and bream fishing in the Gulf of Ismidt, which is, indirectly, an inlet of the Mediterranean, though immeasurably more prolific of fish, has already been described (pp. 354, 364). Of the Mediterranean coast of Africa I know little, though at Tipasa, in Algeria, sheepshead up to five pounds may be caught from the rocks, using float tackle and paste bait, and there are also grey mullet and bass. It is probable, indeed, that sport in Algeria and Tunis would be considerably better than along the north shore, as these African waters would not be so overfished as those within reach of Greeks, Italians, or Provençals.

II. ASIA

ADEN. I have hooked very large sharks here at the anchorage of the P. and O. steamers, and there are also khokari (a kind of bass) up to seventy or eighty pounds, caught with either sardine or boiled potato for bait, and seer up to twenty-five pounds. The seer may be caught railing with mackerel, sardine, or Devon minnow. It fights desperately, and sometimes jumps like a small tarpon. The khokari appear off Suez at the time of the dates, or so, at least, the natives say. Very large grey mullet are caught in the Persian Gulf, but I have no details of their capture on the rod.

INDIA. It is mainly, no doubt, owing to the fact that so many sportsmen are stationed up country, where the mahseer is the angler's favourite

game, that so little is known of the really first-class sea fishing to be had on the coast. In almost every estuary, the bahmin, or raos, takes the place of our bass. It grows to about fifteen pounds, and strong tackle is needed, the best baits being large live prawns or a small mullet or bomalo (i.e. "Bombay duck"). During the cold weather, the bahmin may be found in most estuaries along the Malabar Coast and at various spots in Bombay Harbour, as well as along the Coromandel Coast and off Akyab, all noted grounds for this sporting fish. October is, on the whole, the best month for bahmin-fishing, and the best bags will be made when the water is very clear. The above-mentioned seer, also known in parts of India as surmi, is likewise caught in landlocked bays and estuaries, among others Karachi Harbour, Colombo and Galle. Bahmin and nair are caught in estuaries along the Malabar Coast, a small mullet being the most deadly bait. The jumping habit of the bahmin has already been referred to. Like so many fishes of tropical seas (the tarpon among them), it has a very bony roof to the mouth, and is not, therefore, always securely hooked. At any rate, a tight line must be kept on it.

Another famous estuary fish of Indian seas is the begti, or dangara, which grows to a weight of over eighty pounds, and is caught on summer evenings. A small mullet, a large prawn, or a mud-fish is excellent bait, the last-named being preferred when procurable. The reel should carry at least two hundred yards of line and, as the fish has very sharp teeth, the trace should be of twisted brass wire, with swivels.

III. AFRICA

Passing reference was made above to the sea angling at Tangier and Tipasa.

MOROCCO. There is fair sport at any of the seaports on the Atlantic coast of Morocco. At Casablanca I have made large catches of mixed fish, though the black-mouthed dogfish was usually too conspicuous to be welcome. Further down the coast, at Mogador, there are plenty of bass in summer, and they may be caught either trolling with artificial baits, or bottom-fishing with sardine, prawn, or squid.

LAGOS. Immense tarpon are to be seen close to the outer end of the mole, and one weighing 107 lb. was quite recently caught on the rod. There are also large barracoutas and horse-mackerel, and a small mullet is the best all-round bait.

SOUTH AFRICA. The sport of sea angling has much developed of late years at Durban, Natal, East London, and elsewhere. At Durban, in the mouth of the Umgeni River, " Cape salmon " are caught up to ten pounds, baiting with sardine, mullet, or shrimp, as well as kingfish up to sixty pounds, and barracouta. Immense sandsharks—the record, so far, was a fish of ten feet four inches, weighing 432½ lb.—have been landed on the beach at Lourenço Marques. These sandsharks, which are not unlike our monkfish, are played on very powerful bamboo rods, with two or three hundred yards of line on the reel, and a steel trace for the hook. Other fish caught from the beaches are skate, " salmon," and " mussel crackers," the last being immense sea bream up to sixty or seventy pounds, and somewhat resembling the Australian snapper or the *merjan* of Turkish seas.

In Natal, the " seventy-four," a heavy fighter, easily recognized by the black spot on each side of its body, is a favourite fish. In all wharf fishing at the Cape, the " toby," a little fish that seizes every bait, is as great a nuisance as are chad on the pollack grounds at home. There is good sport in some of the lagoons, with rod and light tackle, baiting with razorfish or any small fish, and large kabeljauw, up to one hundred pounds, are sometimes caught in these sheltered waters, as well as grey mullet up to ten pounds, the last-named being caught with paste bait.

EAST AFRICA. At Zanzibar, cavalli up to ten pounds are caught on the rod, with a live sardine for bait. The black fishermen have a curious habit of attracting the fish round the boat by splashing their hands in the water and then throwing in several sardines, one of which is hooked through the lips. On the Somali coast, there are dorab up to twenty pounds, the best bait being a small mullet. These fish are taken either trolling or fishing on the bottom. Port Sudan has wonderful fishing.

IV. AMERICA

WEST INDIES AND SPANISH MAIN. There is good sea fishing throughout the islands of the Caribbean and along the coast of Venezuela and Columbia, though the water is at times so clear, and the sun so bright, that it is next to impossible to deceive the fish, which, though little fished for, are extraordinarily suspicious of even fine tackle, as I have repeatedly found. Still, I have caught both snapper and barracouta

at La Guaira and from the long pier at Savanilla, and good sport may be had off La Peña with large kingfish, though sharks are also troublesome at times.

All through the islands there is tarpon fishing in the mouths of rivers and among the bocas. At Trinidad, the fish, known locally as the *Grand-écaille*, is caught from May to August, and among the other sporting sea fish of that island are the kingfish, or *tasard*, up to twenty-five pounds, the cavalli, or *carangue*, of several different kinds, barracouta, growing to a length of eight feet, but less game than the others, and many other species. The best baits for trolling at Trinidad are sardines and ballahoo, the latter being large enough to make two baits, whereas the sardine is used whole. Mackerel is also used for bait, as well as anchovies, cockles, "zagaya" (the local name of a shore-crab), prawns and squid, known to the natives as *cheche*.

At Grenada, there are tarpon in the mouths of the rivers, as well as cavalli, kingfish, Spanish mackerel, albacore and bonito.

At Dominica, the tarpon-fishing is best in autumn, but there are always kingfish and cavalli.

Jamaica has tarpon in several of its estuaries and at Port Royal, and there are barracouta, kingfish and cavalli almost anywhere on the coast, though the water on the north side, at Montego Bay and elsewhere, is often too clear for sport. A small garfish is a favourite bait for barracouta at Montego Bay, and my boatman used to catch these live baits most ingeniously with a reel of cotton and a piece of bread on the small hook. On such tackle he would strike and hook a garfish fifty or sixty yards from the boat.

BERMUDA. Black bream are caught from the breakwater, with a piece of potato for bait.

CANADA. On the east side, at Cape Breton Island, large pollack are caught in St Ann Bay, close to the lighthouse of the inner harbour. The Canadian tuna fishing has already been described (p. 334). On the Pacific coast, blue bass and sea trout are caught at Stanley Park, Vancouver, baiting with worms, and there is deep water close alongside the wharves. Salmon up to fifty pounds and over are caught on the rod in the open sea at Sechelt and elsewhere, trailing a spoon bait behind the boat, and very large cod take a spoon bait on the same grounds. August and September are the best months for this sport with salmon in salt water.

UNITED STATES. The fishing in Florida and California has already been referred to (p. 303, 329), but there is good sea fishing all down the east side. In Mexico, too, Mr Conn tells me that the fishing is far superior to anything in California, as the fish have no knowledge of fishermen and their tricks.

V. AUSTRALASIA

Something has been said above of the snapper fishing, black bream and other sport in New South Wales.

QUEENSLAND. It is not, perhaps, generally known that tarpon occur all along the north coast of Queensland and round New Guinea, but such is the case. Pretty sport may be had with the sand-whiting on the open beaches near Brisbane, fishing with a light casting rod and small hooks baited with peeled shrimp. The method of fishing is to wade in shallow water and cast just behind the waves, but brogues should be worn as protection against stingrays and flatheads.

NEW ZEALAND. The snapper is, as in Australia, a favourite fish with the handliner, but an even finer fish is the hapuka, or groper, which grows to a hundred pounds, and is caught from boats anchored in deep water, the bait being a small live fish or piece of crayfish lashed to the hook. Another good fish in New Zealand waters is the carwai, which takes a spinning bait, and it is interesting to know that one of the big trout, so successfully introduced from Europe, has, before now, been taken when fishing for carwai two or three miles from the land. It seems that, with few exceptions, all these trout go down to the sea, like salmon and sea trout, and the failure of salmon in New Zealand rivers has, in fact, been explained on the somewhat fantastic theory that they have gone astray at sea in a vain endeavour to regain their native rivers in the northern hemisphere!

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